

Introduction

121 The following string figures were collected at odd moments
126 during the course of formal ethnological study of Pukapukan culture in 1934-1935. Information about this Polynesian atoll, its culture and the nature of the joint research of Ernest Beaglehole and myself is given elsewhere (1). I am indebted

1. See 2, Literature Cited, page 27.

to Kenneth P. Emory, Bernice P. Bishop Museum, for assistance in making the photographs from which the line drawings have been made. Ernest Beaglehole has helped me prepare this manuscript for publication.

Figures

524 String figures (waiwai) are made by Pukapukans with lengths
517 of pandanus material (lito). Both children and adults enjoy making the figures whenever the spirit moves them. "Crazes" are common. For days at a time everyone has a piece of pandanus in his hand and makes the figures whenever he has a moment to spare. Experts good naturedly teach novices, and children too young to apprehend nevertheless proudly contrive with weirdly tangled strings to emulate their elders. Then the craze dies down and no one bothers with the figures until a later chance spark recreates popular interest. The figures are made for amusement only. They have no religious or magical import.

Though most can make the majority of figures collected, only a few know them all. All the people however are familiar with the names of every old figure and are quick to label as a mere thing (mea wua) of no account, modern inventions.

The following collection includes, with one doubtful exception, only authentically old Pukapukan figures.

Comparative note

524 The accompanying table shows the distribution of 17 string
171 figures and 1 trick figure of the Pukapukan series which correspond to figures reported from other Oceanic areas. (2)

2. An asterisk over the name of a figure in the table indicates that the figure is not identical in all movements with the corresponding Pukapukan figure. In most cases one figure continues where the other leaves off. In all cases the figures are sufficiently alike over a series of movements for the correspondence to be noteworthy.

524 The comparative material is much too unequal for final results
 171 to be adduced and must inevitably remain so until an exhaustive number of figures is collected from each island group in Oceania. Certain tentative conclusions however may be mentioned. Taking Polynesia proper and dividing it into four sub-areas (north, Hawaii; south, New Zealand; central and east, Aitutaki, Australs, Marquesas, Society, and Tuamotus; and west, Tokelau, Tonga, Samoa, Uvea, and also Fiji), the percentage of correspondence between Pukapukan figures and the total number of available figures for each area mentioned is shown in the following:

	<u>Figures reported</u>	<u>Pukapuka</u>	<u>Percentage</u>
West	54	17	31
South	36	7	20
Central-218		31	14
East			
North	115	4	3

From this it is evident that prevailing correspondences between Pukapuka and the rest of Polynesia rather heavily favor the West. The percentage of 31 for the West may be compared with a total correspondence of 37 percent for Polynesia, excluding the West. If western and southern affiliations with Pukapuka are grouped, the percentage correspondence is 51 against a correspondence of 17 percent with North, Central, and East.

Of the 8 Pukapukan figures which correspond with figures from Fiji, 6 are widely distributed throughout the rest of Polynesia. Only 2 are reported for Pukapuka and Fiji alone. Of the 9 Pukapukan figures also found in the Tuamotus, 7 are found elsewhere in Polynesia, leaving but 2 which are reported for the Tuamotus and Pukapuka alone. Only 1 of the 7 Pukapukan figures found also in New Zealand is not reported elsewhere. This analysis indicates that unique Pukapukan figures occur equally in part of the West, part of the East, and to a degree, in the South.

The Pukapukan series of 6 figures which are grouped under the type figure, Te-imu-o-Wale-Puapua, is strikingly absent in figures reported elsewhere. The Marquesan figure, Te-nohona-o-te-kua (Handy, 2, p. 32), shows vague resemblances to one of the series (Lua-tangata). The Maori figure, Kopu 2 (Andersen, 1, p. 65) bears some resemblance again to another of this series, Te-imu-o-Tima, but the Maori and Pukapukan figures are by no means identical.

DISTRIBUTION OF PUKAPUKAN STRING FIGURES

Pukapuka	Tuamotus	Austral	Fiji	New Zealand
1. Tava	Kokikokiko (3 Diamonds)	Hauri (Rurutu)	Suviauto Kapa	Parori Over and over
2. Na wiwi (Lau kape series)	Mangeongo	Raupaka tatal (Rapa) Rurutu Tubuai Tup. Rim.	Imbi	Takapau
3. Tikonihoni	Moko (Meth. 2)	Ga ure (Rapa)	Tambua*	Makuli*
4. Wala yila wua		Matariki (Rapa)	Lalakai	Ikiki
5. Kumete		Ga kamia (Rapa) Mato (Rim.) Apoa Hoo (Rurutu)	Velovelo	
6. Te kolemu yengiyengi	Ki fāru	(la-la) (Rapa)		Toemi
7. Wala ola		Tuera (Rapa)	Mataki lallai	
8. Te tai kiki		(Rapa) (Rurutu) (Rim., Tub.)		
9. Te itu wala kula	Kahengahanga* Na fare fura	Te Are Matui (Rurutu) (Rim.) (Tup.)		
10. Te kivi a te hakai	Puhanga toto			
11. Te itu wawali kilunga	Te vaka Tiranga			Te waka a Tama Rororoti
12. La palepale				
13. Kuponga			Kuponga* Lawa	
14. Palakina (a) Kitihihi poi (b) Tasa kula	(a) Komo rikirihi (b) Na taringa moko			
15. Te motangi yaulaka (Meth. 1)	Te saki o Hiro*			
16. Te imu o Te Lautalo				Kourā
17. Te pa o Mumumōvaka			Rapa ni Kula	
Hand slip trick				
Authority	Emery (7)	Stokes (13)	Hornall (10)	Anderson (1)

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DISTRIBUTION OF PUKAPUKAN STRING FIGURES

Society	Marquesses	Hawaii	Tonga	Uvea
Iolo	Tohisau		Matamata kupenga Moenga	Mata kupenga liliki
Firi rau anani	Kou kape		Lou kape*	
Mo'o		Moo-iki B (Meth. 1)	Pilitaleiku*	
	Tapa'au tua fitu*			
Apoa mai ahana Apoa tle		Wa'a		
	Pope tikaaue	Okole amo (Meth. 3)		
Burutu	Tukij ken*			
				Tai loloto
Te tumu o te papa* Te fare no Oro*				
		Four Eyes A (Meth. 2)		
Fifi rau apo				Mata kupenga lalahi
		E loli e		
Handy (9)	Handy (9)	Dickey (6)	Hornell (10)	Burrows (3)

(1934-1935)

Pukapukano

DISTRIBUTION OF PUKAPUKAN STRING FIGURES

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DISTRIBUTION OF PUKAPUKAN STRING FIGURES

Gilbert	New Hebrides	Tokelau	Nauru
Tape		Tafa	
	Kilikia leaves		
			Flying fishes
Hornell (10)	Dickay (4)	Hornell (4)	Hornbruch (8)

524 A very individual Hawaiian ending for some figures which
 171 is made by navahoing the thumbs, inserting the indices into the thumb triangles, and turning the fingers away under the figure and up which Dickey (6, p. 9) found elsewhere only in one figure reported from Africa, Ireland, and for one Osage Indian is employed in the Pukapukan figures, Te-kivi-a-te-kakai and Te-kivi-a-Yilewu in a manner which corresponds exactly to the Hawaiian method. Emory (7) reports Te-kivi-a-te-kakai for the Tuamotus. The same ending is used in a related manner for the Pukapukan liu wuwuli figures.

Grouping of figures

Twenty-eight of the Pukapukan figures may be grouped into 9 series, each employing a characteristic opening or closing which is unique to the series. These groups are:

- | | |
|-------------------------------|--------------------------|
| 1. Te-imu-o-Wale-Puapua | 4. Te-matangi-tavili |
| Te-imu-o-Tima | Te-matangi-yauleka |
| Lua-tangata-wetu-i-te-akau | Te-matangi-tavili |
| Te-ikapaetai | |
| Te-langi-loa | 5. Wala-ola |
| Te-papanga-o-te-waulua | Wala-yila-wua |
| 2. Taku-laukape | 6. Te-liu-wuwuli-ki-lalo |
| Na-wiwi | Te-liu-wuwuli-ki-lunga |
| | 7. Paiokiole |
| Te-Va-o-Manuyiki-ma-Lakawanga | Tikonikoni |
| Te-pitopito-i-Kolo | |
| Te-kapu-ta-ika | 8. Te-tau-lunga |
| Kau-a-pulaka | Te-tau-lalo |
| 3. Te-ponaunau | |
| Te-katatuna | 9. Te-kivi-a-te-kakai |
| Te-pu-o-Mumumaveka | Te-kivi-a-Yilewu |

The remainder of the figures do not fall into any groups.

Most of the Pukapukan figures open in the usual Polynesian manner, position 1, opening A. Besides this orthodox opening, 11 other openings are used in 13 figures. The figures that have unorthodox openings are:

- | | |
|-------------------------------|---------------------------|
| 1. Te-tavata-v-o-te-wui-kiole | 5. Te-itu-wala-kula |
| 2. Te-Pu-o-Loto | 6. Te-liu-wuwuli-ki-lalo |
| 3. Te-matangi-tavili | 7. Te-liu-wuwuli-ki-lunga |
| Te-matangi-yauleka | 8. Te-kolemu-yengiyengi |
| 4. Te-matangi-taulele | 9. Te-wua-ya-valu |
| Te-tai-kiki | 10. Kupenga |
| | 11. Te-kau-a-pulaka |

Terminology

- 524 In these descriptions I follow the terminology suggested by Rivers and Haddon (12), using it however in a somewhat abbreviated form in order to obtain compact presentation. The description should be readily understandable by the expert. In these descriptions the phrase, "proximally (or distally) draw back" a given string, is a shortened form of the more usual but cumbersome statement, "fingers pass proximally (or distally) into the (named) loop and carry back the given string on their backs." Proximally (or distally) in the following descriptions means therefore to enter the named loop from the proximal (or distal) side and proceed as further directed. The direction, "drop thumbs," or etc., means obviously to drop the loops from the thumbs or other named fingers by withdrawing the fingers from the loops. The direction "slip the index finger loops over the wrist" is to push other fingers into the index loops and stretch it so that it slips back, or to pick the index loop up with the opposite hand and drop it over the wrist. Preference decides which alternate the individual operator adopts. Again navahoing is done by the mouth, lips or teeth, by the fingers of the opposite hand, or by the fingers of the same hand, depending on the skill of the operator. Unless otherwise stated, it is to be understood that a figure is stretched after each movement. In opening some of the figures a secondary, unnamed figure results. This secondary figure is termed the lui of the main figure. Unless other wise specified, all the figures open easily without tangling by being laid on a flat surface and picked up in the middle point of the radial and ulnar strings of the figure.

Native Terminology

A string figure is termed waiwai; to make a figure is wai. To describe movements the fingers are distinguished as follows: thumb, matua; index, middle and ring fingers, all called loa; little finger, lewu. Any confusion which results from not distinguishing index, middle and ring fingers is resolved by personal correction of the pupil by the expert. The word tui means proximally to pick up palmar strings with the indices, that is, to proceed from position 1 to opening A. Tui also means proximally to draw back a string; thus, Tui i-a loa ki-a lewu, means: with the index finger proximally draw back the little finger radial string. Nape is distally to carry back a string. Ui is proximally to remove a loop

524 from one finger and is distinguished from ui yala which is distally to remove a loop from a finger. Tatao is to place fingers (usually the ring and middle) on a string and hold it. Lalao is to pass proximal and ulnar to a string, which is then carried back from the ulnar side. Kati is to navaho, usually done by the Pukapukan with the mouth. Takavili is to rotate: takavili ki lalo, rotate in an ulnar direction; takavili ki lunga rotate in a radial direction. Maka is to drop fingers or finger: maka i-a lewu, drop little fingers.

Pukapukan Figures

Te-imu-o-Wale-Puapua (the-oven-of-Wale-Puapua)

1. Opening A.
2. Thumbs, distal to intermediate strings, distally draw back little finger ulnars,
3. Middle fingers, distal to index strings, proximally draw back thumb ulnars, dropping thumbs.
4. Thumbs, proximal to intermediate strings, proximally draw back little finger radials.
5. Thumbs, distal to index strings, proximally draw back middle finger radials.
6. Navaho thumbs.
7. Drop middle fingers.
8. Repeat 3.
9. Repeat 4, dropping little fingers.
10. Repeat 5, dropping middle fingers.
11. Middle and ring fingers, proximal to index strings, placed distally on thumb ulnars.
12. Thumbs proximally into index finger loops.
13. Navaho double proximal thumb radials.
14. Thumbs distally remove index loops.
15. Indices, from ulnar distal side, draw back middle and ring finger radials, dropping thumbs. (Figure 1.) For the lui (figure 2) drop indices.

Te-imu-o-Tima (The-oven-of-Tima).

1. Opening A.
2. Thumbs, distal to index strings, distally draw back little finger ulnars.
3. Middle fingers, distal to index strings, proximally draw back thumb ulnars, dropping thumbs.
4. Thumbs pass proximally through index loops and, proximal to middle finger strings, draw back little finger radials.

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5. Thumbs, distal to index strings, proximally in middle finger loops.
 6. Navaho thumbs; drop middle fingers.
 7. Middle fingers, distal to index strings, proximally remove thumb loops.
 8. Thumbs, proximal to intermediate strings, proximally draw back little finger radials.
 9. Thumbs, distal to index strings, proximally into middle finger loops.
 10. Drop middle and little fingers.
 11. Middle and ring fingers, proximal to index strings, placed distally on thumb ulnars.
 12. Thumbs proximally into index loops.
 13. Navaho thumb double proximal radials.
 14. Thumbs distally remove index loops.
 15. Indices from ulnar side draw back middle and ring finger radials, dropping thumbs. (Figure 3.)
- For the lui (Figure 4) of this figure, a larger oven, drop index fingers.

Lua-tangata-wetu-i-te-akau (Two-men-standing-on-reef).

1. Opening A.
2. Thumbs, distal to index strings, distally draw back little finger ulnars.
3. Middle fingers, distal to index strings, proximally draw back thumb ulnars, dropping thumbs.
4. Thumbs pass distally though index loops and, proximal to middle finger strings, proximally draw back little finger radials.
5. Thumbs, distal to index strings, proximally into middle finger loops.
6. Navaho thumbs; drop middle fingers.
7. Middle fingers, distal to index strings, proximally remove thumb loops.
8. Thumbs, proximal to intermediate strings, proximally draw back little finger radials, dropping little fingers.
9. Thumbs, distal to index strings, proximally remove middle finger loops.
10. Middle and ring fingers, proximal to index strings, placed distally on thumb ulnars.
11. Thumbs proximally into index loops.
12. Navaho thumb double proximal radials.
13. Thumbs distally remove index loops.
14. Indices from ulnar side draw back middle and ring finger radials, dropping thumbs. (Figure 5.)

For the lui (figure 6) in which the two men are seen with their fishing rods and baskets, drop indices.

524 Te-ikapaetai (Turtle)

1. Opening A.
 2. Middle fingers proximally remove index loops.
 3. Indices proximally remove thumb loops.
 4. Right thumb placed distally on index radial; rotate in ulnar direction back to position.
 5. Left thumb proximally draws back right thumb palmar string.
 6. Thumbs, distal to intermediate strings, distally draw back little finger ulnars.
 7. Middle fingers, distal to index strings, proximally draw back thumb ulnars, dropping thumbs.
 8. Thumbs, proximal to intermediate strings, proximally draw back little finger radials.
 9. Thumbs, distal to index strings, proximally draw back middle finger distal radials.
 10. Navaho thumbs.
 11. Drop middle finger distal loops.
 12. Middle fingers proximally remove thumb loops.
 13. Repeat 8.
 14. Repeat 9.
 15. Drop middle finger distal loops.
 16. Drop little fingers.
 17. Indices distally remove middle finger loops.
 18. Middle and ring fingers, proximal to index strings, placed distally on thumb ulnars.
 19. Thumbs proximally into index finger loops.
 20. Navaho double proximal thumb radials.
 21. Thumbs distally remove index loops.
 22. Indices, distally from ulnar side, draw back middle and ring finger radials, dropping thumbs (Figure 7)
- For the lui of this figure, drop indices.

Te-papanga-o-te-waulua (The-platform-of-the-double-canoe.)

1. Opening A.
2. Middle fingers proximally remove index loops.
3. Indices proximally remove thumb loops.
4. Right thumb placed distally on index radial; rotate in ulnar direction back to position.
5. Left thumb proximally draws back right thumb palmar string.
6. Thumbs, distal to intermediate strings, distally draw back little finger ulnars.
7. Middle fingers, distal to index strings, proximally draw back thumb ulnars, dropping thumbs.

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8. Thumbs, distal to intermediate proximal strings, proximal to distal middle finger strings, proximally draw back little finger radials.
 9. Thumbs proximally into middle finger distal loops.
 10. Navaho thumbs.
 11. Drop middle finger distal loops.
 12. Middle fingers, distal to index strings, proximally draw back thumb ulnars, dropping thumbs.
 13. Repeat 8.
 14. Repeat 9, dropping middle finger distal loops and little fingers.
 15. Middle fingers, from radial side of thumbs distally remove thumb proximal loops.
 16. Thumbs proximally remove middle finger distal loops.
 17. Repeat 15.
 18. Repeat 16.
 19. One at a time, rotate thumbs radially.
 20. Indices distally remove middle finger loops.
 21. Middle and ring fingers, proximal to index strings, placed distally on thumb ulnars.
 22. Thumbs proximally into index loops.
 23. Navaho thumb proximal double radials.
 24. Thumbs distally remove index loops.
 25. Indices, from ulnar distal side, draw back middle and ring finger radials, dropping thumbs. (Figure 8)
Drop indices and stretch for the lui.

Te-langi-loa (The-tall-sky).

1. Opening A.
2. Thumbs, distal to index strings, distally draw back little finger ulnars.
3. Middle fingers, distal to index strings, proximally draw back thumb ulnars, dropping thumbs.
4. Thumbs, distal to index strings, proximal to middle finger strings, proximally draw back little finger radials.
5. Thumbs proximally into middle finger loops.
6. Navaho thumbs; drop middle fingers.
7. Middle fingers, distal to index strings, proximally remove thumb loops.
8. Thumbs, passing distally through index loop, proximally draw back little finger radials.
9. Thumbs proximally remove middle finger loops.
10. Drop little fingers.

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11. Middle fingers, from radial side of thumbs, distally remove thumb proximal loops.
 12. Thumbs proximally remove middle finger loops.
 13. Repeat 11.
 14. Repeat 12.
 15. Rotate thumbs in radial direction.
 16. Middle and ring fingers, proximal to index strings, placed distally on thumb ulnars.
 17. Thumbs proximally into index loops.
 18. Navaho thumb double proximal radials.
 19. Thumbs distally remove index loops.
 20. Indices, from ulnar side, draw back middle and ring finger radials, dropping thumbs. (Figure 9).
- For the lui (figure 10) of this figure, drop index loops and stretch.

Taku-laukape (My-turtle-fat).

1. Opening A.
2. Drop thumbs.
3. Right index finger, distal to all strings, pick up little finger ulnar from ulnar side and continues rotation back to position.
4. Left index finger proximally draws back right index distal palmar string.
5. Thumbs, proximal to index strings, proximally draw back little finger radials and, from the ulnar side, index proximal ulnars.
6. Navaho thumbs.
7. Thumbs, distal to proximal index strings, proximally into distal index loops.
8. Navaho thumbs.
9. Drop distal index loops.
10. Indices proximally remove thumb loops.
11. Thumbs, proximal to index strings, proximally draw back little finger radials.
12. Thumbs, distal to proximal index loops, proximally draw back distal index radials.
13. Middle fingers, distal to index ulnars, proximally draw back index radials.
14. Navaho thumbs.
15. Drop little fingers, turning palms out. (Figure 11).

Na-wiwi (The-crossings).

1. Opening A.
2. Drop thumbs.
3. Right index finger, distal to all strings, picks up little finger ulnar from ulnar side and continues rotation back to position.

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4. Left index finger proximally draws back right index distal palmar string.
5. Thumbs, proximal to index strings, proximally draw back little finger radials.
6. Thumbs, distal to proximal index strings, proximally into distal index loops.
7. Navaho thumbs.
8. Drop distal index loops.
9. Indices proximally remove thumb loops.
10. Repeat 5.
11. Thumbs, distal to proximal index loops, proximally draw back distal index radials.
12. Middle fingers, distal to index ulnars, draw back index radials.
13. Navaho thumbs.
14. Drop little fingers, turning palms out. (Figure 12)

Te-va-o-Manuyiki-ma-Lakawanga (The-space-between-Manihiki-and-Rakahanga).

1. Opening A.
2. Drop thumbs.
3. Left index finger, distal to all strings, picks up left little finger ulnar from ulnar side and continues rotation back to position.
4. Right index finger proximally draws back left index distal palmar string.
5. Thumbs, proximal to index strings, draw back from the ulnar side proximal index ulnars.
6. Thumbs, distal to proximal index strings, proximally into distal index loops.
7. Navaho thumbs.
8. Drop distal index loops.
9. Indices distally remove thumb loops.
10. Thumbs distally into proximal index loops, draw back from ulnar side both proximal and distal index ulnars.
11. Middle fingers, distal to distal index radials, proximally draw back proximal index radials.
12. Navaho thumbs.
13. Drop little fingers and stretch figure until the middle loops of the figure separate. (Figure 13).

Te-pitopito-i-Kolo [The-navel-in-Kolo (?)]

1. Opening A.
2. Drop thumbs.

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3. Right index finger, distal to all strings, picks up little finger ulnar from ulnar side and continues rotation back to position.
4. Left index finger proximally draws back right index distal palmar string.
5. Thumbs, proximal to index strings, proximally draw back little finger radials.
6. Thumbs, distal to proximal index strings, proximally into distal index loops.
7. Navaho thumbs.
8. Drop distal index finger loops.
9. Indices distally remove thumb loops.
10. Thumbs, distally into proximal index loops, draw back from ulnar side both proximal and distal index ulnars.
11. Middle fingers, distal to distal index radials, proximally draw back proximal index radials.
12. Navaho thumbs.
13. Drop little fingers. (Figure 14).

Te-kapu-ta-ika (Meaning unknown).

1. Opening A.
2. Drop thumbs.
3. Right index, distal to all strings, picks up little finger ulnar from ulnar side and continues rotation back to position.
4. Left index finger proximally draws back right index distal palmar string.
5. Thumbs, proximal to index strings, draw back from the ulnar side proximal index ulnars.
6. Thumbs, distal to proximal index strings, proximally into distal index loops.
7. Navaho thumbs.
8. Drop distal index loops.
9. Indices distally remove thumb loops.
10. Thumbs distally into proximal index loops, draw back from ulnar side both proximal and distal index radials.
11. Middle fingers, distal to distal index radials, proximally draw back proximal index radials.
12. Navaho thumbs.
13. Drop little fingers (Figure 15).

Kau-a-pulaka (Pulaka-stalks).

1. Opening A with a doubled string.
2. Drop thumbs.
3. Separate double index loops into proximal and distal loops.

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4. Thumbs, proximal to index strings, draw back from the ulnar side proximal index ulnars.
 5. Thumbs, distal to proximal index strings, proximally into distal index loops.
 6. Navaho thumbs.
 7. Drop distal index loops.
 8. Indices distally remove thumb loops.
 9. Thumbs distally into proximal index loops, draw back from ulnar side both proximal and distal index ulnars.
 10. Middle fingers, distal to distal index radials, proximally draw back proximal index radials.
 11. Navaho thumbs.
 12. Drop little fingers. (Figure 16.)

Te-ponaunau (meaning unknown).

1. Opening A.
2. Slip index loops over wrists.
3. Thumbs proximally draw back little finger radials.
4. Little fingers proximally draw back thumb ulnars.
5. Each hand separately: with opposite hand remove double palmar strings, hold while wrist loop is slipped back over thumb. Replace palmar strings across palms, behind little and index fingers.
6. Thumbs proximally into loops formed by index radials and little finger ulnars. Turn palms out (figure 17) and move thumbs in and out (stretching in ulnar direction and releasing radially) to the rhythm of the chant (All syllables are short and the whole is sung quickly)

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[533]

Te ponaunau, te ponaunau,
 Te potia ua, te potia ua,
 Ua lele, ua lele,
 Poloiti polo lau mea mea
 Aleuei, aluei, pa na, pa na
 E tu o o le e, motu e taiti e,
 Motu la Manuyiki laua
 ma Lakawanga.

Meaning obscure

Severed are they,
 Manihiki and Rakahanga.

As the last line is sung, the thumbs are released and the figure opens. (Figure 18.)

524 Katatuna (Mosquito-larvae).

1. Opening A.
2. Middle fingers proximally remove index loops.
3. Indices proximally remove thumb loops.
4. Right thumb distally on index radial, rotate back to position.

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5. Left thumb proximally draws back right thumb palmar string.
6. Thumbs, distal to intermediate strings, proximally draw back little finger radials.
7. Little fingers, distal to intermediate strings, proximally draw back thumb ulnars.
8. Indices distally into triangles formed by index radial and ulnar strings with palmar strings.
9. Middle fingers distally into oblongs formed by middle finger radial and ulnar strings and palmar string.
10. Drop little fingers and thumbs. (Figure 19). With mouth pick up double strings which run across figure on side nearest the operator. Holding mouth strings, move hands to and from body to rhythm of the chant:

[539] Te katatuna e te wui wui makupuna e, The mosquito
 larvae of the many,
 many grandchildren
 Lua vae kolili o Moealo. The two kolili bird
 (like) legs of Moealo.

Te-pu-o-Mumumaveka (The-hole-of-Mumumaveka).

1. Opening A.
2. Slip index loops over wrists.
3. Thumbs proximally draw back little finger radials.
4. Little fingers proximally draw back thumb ulnars.
5. Right index finger and thumb lift off and hold left palmar strings while left wrist loop is slipped over left index; right index and thumb place held strings back over left palm behind thumb and little finger.
6. Repeat 5 on right hand.
7. Indices proximally pick up palmar index strings of opposite hands. (Figure 20).
8. Navaho indices.
9. Indices distally into and through heptagon formed by distal strings in center of figure down into and through central diamond formed by proximal strings of figure; stretch while allowing index loops to slip down and off the finger tips. (Figure 21).
 To open figure, drop indices.

Te-matangi-yauleka (The-gentle-wind). Method 1 a. This is probably the older of two methods of making this figure. It was known only to two old men.

1. Position 1 on left hand; opening A on right hand.
2. Right thumb proximally draws back right index

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radial. Left thumb proximally draws back left little finger radial.

3. Left index finger proximally draws back left thumb ulnar.
4. Navaho thumbs.
5. Drop little fingers.
6. Place ring and little fingers on thumb radials, dropping thumbs.
7. Thumbs, distally inserted between double strings separating ring and index fingers, carry back the dorsal of the two strings.
8. Middle fingers, distal to index ulnars, proximally carry back thumb ulnars.
9. With opposite hand lift off thumb radials, carry them below string held by ring and little fingers, and back on to thumb.
10. Drop ring and little fingers. (Figure 22).

Method 1 b.

A slight variation in this method gives a similar figure known by the same name.

1. Position 1 on both hands.
2. Right index finger distally picks up left palmar string from dorsal side.

Continue with movements 2 to 11 above. (Figure 23).

Te-matangi-yauleka (The-gentle-wind). Method 2. The modern method of making a figure slightly different from that made by the older method.

1. Opening A on left hand; position 1 on right hand. Rotate right little finger in ulnar direction and rotate right thumb in ulnar direction.
2. Right thumb proximally draws back right little finger radial. Left thumb distally draws back left index ulnar.
3. Right middle finger proximally draws back right thumb ulnar. Left middle finger proximally draws back left index radial.
4. Navaho thumbs.
5. Drop little fingers. (Figure 24).

Te-matangi-tavili (The-whirlwind).

1. Opening A on left hand; position 1 on right hand. Rotate right little finger in ulnar direction.
2. Right thumb proximally draws back right little finger radial. Left thumb distally draws back left index finger ulnar.
3. Right middle finger proximally draws back right thumb ulnar. Left middle finger proximally draws back left index radial.

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4. Navaho thumbs.

5. Drop little fingers. (Figure 25.)

Te-matangi-taulele (Shifting-wind). Though this figure does not fit into any series, it is here grouped with the other "wind" figures after which it is always made.

1. Double loop string over thumbs, carry remainder behind little fingers across palms.
2. Indices, distal to little finger ulnar, from ulnar side carries back little finger ulnar and rotates distally in ulnar direction through thumb loop back to position.
3. Drop thumbs.
4. Indices distally into little finger loops, rotate in radial direction back to position.
5. Thumbs proximally draw back radial index strings.
6. Drop little fingers. (Figure 26.)

Wala-ola (Growing-pandanus)

1. Opening A.
 2. Thumbs, proximal to index strings, proximally into little finger loops. Thumbs rotate in ulnar direction back to position, dropping little fingers.
 3. Middle and ring fingers, proximal to index strings, distally placed on thumb ulnars.
 4. Thumbs proximally into index loops.
 5. Navaho thumbs.
 6. Thumbs distally remove index loops.
 7. Indices from distal, ulnar side, pick up thumb ulnars, dropping thumbs. (Figure 27.)
- To open figure, drop indices.

Wala-yila-wua (Meaning unknown).

1. Opening A.
2. Thumbs, proximal to index strings, proximally into little finger loops. Thumbs rotate in ulnar direction back to position, dropping little fingers.
3. Middle and ring fingers proximally placed on index radials.
4. Indices distally into thumb loops. Indices rotate in radial direction back to position, dropping middle and ring fingers. (Figure 28.)

Te-liu-wuwuli-ki-lalo (The-inside-turned-down).

1. Position 1.
2. Thumbs proximally pick up opposite hand palmar strings.
3. With mouth pick up left thumb proximal radial and retain.
4. Stretch hands away from mouth, lengthening string held by mouth. Drop mouth string below figure and swing it over figure from ulnar side.

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5. With mouth pick up in middle of figure the crossing of thumb ulnars with little finger radials.
6. With hands remove mouth loop and, carrying it in ulnar direction, place it on great toe of right foot. (Figure 29.)
7. Indices pass distal and radial to thumb strings below figure and proximally up into squares formed at juncture of toe strings with little finger ulnars and string ulnar and parallel to them; passing distal to ulnar sides of square, rotate indices in ulnar direction back to position. (Figure 30.)
8. Release toe strings. (Figure 31)
To open, drop indices.

Te-liu-wuwuli-ki-lunga (The-inside-turned-up).

1. Position 1.
2. Little fingers proximally pick up opposite hand palmar strings.
3. With mouth pick up left little finger proximal ulnar string and retain.
4. Stretch hands away from mouth, lengthening string held by mouth. Drop mouth string over figure.
5. With mouth pick up in center of figure the little finger radials and thumb ulnars at the point where they cross. Draw strings taut by stretching hands from mouth.
6. Indices pass ulnar to little finger strings below figure and proximally up into squares formed at juncture of mouth strings with thumb radials and strings running distal and parallel to them; passing distal to radial sides of squares, indices rotate in radial direction back to position.
7. Drop mouth strings. (Figure 32.)
To open, first drop indices, then little fingers.

Paioikiole (Lozenge). A progressive figure.

1. Opening A.
2. Indices distally draw back little finger ulnars.
3. Indices distally remove thumb loops.
4. Indices, passing distal and ulnar to little finger strings rotate in ulnar direction back to position.
5. Thumbs distally remove index loops.
6. Indices distally pick up little finger ulnars from ulnar side, carry these distally through thumb loops, and rotate with them in ulnar direction back to position, dropping thumbs.
7. Rotate indices in radial direction.
8. Thumbs, proximal to index strings, draw back little

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finger radials.

9. Thumbs proximally into index loops.
10. Navaho thumbs.
11. Drop little fingers. The figure is Kiti-kiti-polo-iti. (Figure 33.)
12. Little fingers (as shown in Fig. 33) proximally into two diamonds in middle top of figure and pull out lower outer diamond strings.
13. Drop indices.
14. Indices proximally carry back thumb distal ulnars. Figure is Taca-kula. (the name of a fish). (Figure 34).
15. Thumbs distally into little finger loops, draw back lower outer diamond strings. Drop little fingers. Figure is Langai-tawola (A school of whales). (Figure 35).
16. Middle and ring fingers proximally hold thumb radials, dropping thumbs.
17. Thumbs distally into loops held by middle and ring fingers, carry back lower outer strings of center diamond, dropping middle fingers. This is Paioikole. (Figure 36).

As he completes each figure in the series, the operator chants its name, attempting to arrive at the next figure when he finishes pronouncing the name of the last.

Tikonikoni (Copulation).

1. Opening A.
2. Indices distally draw back little finger ulnars.
3. Indices distally remove thumb loops.
4. Indices, passing distal and ulnar to little finger strings, rotate in ulnar direction back to position.
5. Thumbs distally remove index loops.
6. Indices distally pick up little finger ulnars from ulnar side, carry these distally through thumb loops, and rotate with them in ulnar direction back to position, dropping thumbs.
7. Indices rotate in ulnar direction.
8. Thumbs proximally draw back little finger radials.
9. Thumbs proximally into index loops.
10. Navaho thumbs. Drop little fingers. (Figure 37).
11. Little fingers proximally into center triangle of the figure (triangle with base at top of figure and apex at bottom) and carry back strings forming sides of the triangle.
12. Drop indices and pull tight with little fingers, making fast the thumb loops. (Figure 38). Insert ring and

524 middle fingers into little finger loops. Drop thumbs and with other fingers slide figure around on hands.

The operator accompanies the making of this figure with a running commentary, telling how a couple go for a stroll to the bush, cut the lover's bed of coconut leaves (represented by figure 37 in movement 10), and proceed (movement 12) to copulate. He invariably ends by holding the figure in his left hand, saying that his couple now hang in the air.

Te-tau-lunga (The-anchor-above).

1. Position I on left hand; opening A on right hand.
2. Rotate left little finger in ulnar direction.
3. Right thumb distally draws back right index ulnar. Left thumb proximally draws back left little finger radial.
4. Right middle finger proximally draws back from radial side right index radial. Left middle finger proximally draws back left thumb ulnar.
5. Navaho thumbs; drop little fingers. (Figure 39).

Te-tau-lalo (The-anchor-below)

1. Position I on left hand; opening A on right hand.
2. Rotate left thumb in ulnar direction.
3. Right thumb distally draws back right index ulnar. Left thumb proximally draws back left little finger radial.
4. Right middle finger proximally draws back from radial side right index radial. Left middle finger proximally draws back left thumb ulnar.
5. Navaho thumbs; drop little fingers. (Figure 40).

Te-kivi-a-te-kakai [The-kivi(?) -of-the-people].

1. Opening A.
2. Drop thumbs.
3. Thumbs, proximal to all strings, draw back little finger ulnars from ulnar side.
4. Drop little fingers.
5. Thumbs distally carry back index ulnars.
6. Little fingers, distal to index strings, proximally draw back thumb ulnars.
7. Drop thumbs.
8. Thumbs, distal to index strings, proximally draw back little finger radials.
9. Thumbs proximally into index loops at points dorsal to palmar strings.
10. Navaho thumbs.
11. Indices distally into thumb triangles (of which thumb palmar strings constitute the radial sides), and

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rotate back to position, dropping little fingers.
(Figure 41).

Te-kivi a-Yilewu [The-kivi (?) -of- (the man)-Yilewu].

1. Opening A.
2. Pass left index finger loop over right index loop on to the right index finger, placing right index loop on left index finger.
3. Drop thumbs.
4. Thumbs, proximal to all strings, draw back little finger ulnars from ulnar side.
5. Drop little fingers.
6. Thumbs distally carry back index ulnars.
7. Little fingers, distal to index strings, proximally draw back thumb ulnars.
8. Drop thumbs.
9. Thumbs, distal to index strings, proximally draw back little finger radials.
10. Thumbs proximally into index loops at points dorsal to palmar strings.
11. Navaho thumbs.
12. Indices distally into thumb triangles (of which thumb palmar strings are the radial sides), and rotate back to position, dropping little fingers. (Figure 42).

Te-imu-o-Te Lautalo (The-oven-of-Te-Lautalo).

1. Opening A.
2. Thumbs, distal to index strings, proximally from ulnar side draw back little finger radials and ulnars.
3. Middle fingers, distal to index strings, proximally draw back thumb ulnars, dropping thumbs.
4. Thumbs proximally on index ulnars.
5. Indices proximally into middle finger loops, carry back middle finger ulnars, which are proximally taken up by thumbs which return to position as the middle fingers and indices are dropped and the figure stretched on thumbs and little fingers.
(Figure 43).

Te-tavatava-o-te-wui-kiolo [The-tavatava-(trap?)-of-the rats].

1. Position 1 on left hand; opening A on right.
2. Left thumb proximally removes left little finger loop.
3. Left little finger, distal and radial to distal thumb strings, distally removes thumb proximal loop.
4. Repeat 2 and 3.
5. Repeat 2 and 3.

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6. Repeat 2 and 3.

7. Left index finger proximally picks up right index palmar string.

8. Drop right index loop and, gently stretching right hand out, wiggle the rat (dropped loop) (Figure 44) along towards the left hand to the rhythm of the chant:

[539]

Te kiole e, ata ngingi,

O rat, good at crying
"Ngingi",

E totolo koe i te taupoto,

You crawl on the
roof's ridge,

E leio koe ki te tala lewu,

You jump down to the
gable end,

Koa patua koe e te tangata,

You are killed by the
people,

Koa tu to paepae watu.

They erect your
gravestones.

Te-la-palepale (The-setting-sun)

1. Opening A.

2. Drop thumbs.

3. Index fingers proximally remove little finger loops.

4. Thumbs distally draw back index proximal ulnars.

5. Thumbs distally draw back index distal ulnars.

6. Middle fingers, distal to index distal radials,
proximally draw back index proximal radials.

7. Navaho thumbs. (Figure 45).

Moamoa (name of a coral organism).

1. Opening A.

2. Drop thumbs.

3. Indices proximally remove little finger loops.

4. Thumbs, proximal to proximal index strings, draw
back from ulnar side proximal index ulnars.5. Thumbs, distal to proximal index strings, proximal
to distal index strings, draw back from ulnar side
distal index ulnars.6. Middle fingers distal to distal index strings
proximally draw back proximal index radials.

7. Navaho thumbs. Turn palms out. (Figure 46).

Te-wua-ya-valu (The-fleet-of-eight).

1. With right hand, loop string across palm and back
of left hand ulnar to thumb, then wind hanging
dorsal string 6 times around left hand and fingers,
each succeeding loop distal to the former. Place
final dorsal string of 6th loop between left ring and
little fingers, and hold thus.

2. With right hand, pick up end of hanging dorsal

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string and make a loop in it by crossing dextral string behind sinistral string. Pass crossing pair of strings, at point where they cross, from ulnar side, under palmar strings of left hand.

3. Little finger and thumb of right hand take up hanging double distal loops. Little finger and thumb of right hand take up two proximal loops of strings slipped under palmar strings.
4. Let palmar strings slip on to the middle of figure as hands are stretched apart. Separate the loops in the middle of the figure to represent canoe sterns. (Figure 47).

Te-tai-kiki (The-tide-going-out).

1. Double loop string over thumbs, remainder over palms behind thumbs.
2. Indices proximally draw back thumb ulnars, dropping thumbs.
3. Thumbs, passing proximal and ulnar to little finger strings, proximally into index loops, rotate in ulnar direction back to position, dropping indices.
4. Thumbs proximally draw back little finger radials.
5. Indices proximally draw back thumb ulnars. (Fig. 48). Drop thumbs.

Repeating indefinitely movements 2 to 5, the figure (the tide) becomes smaller (lower) each time (figs. 49 and 50) until only a line is visible in the center.

To show tide flowing in again and to open figure, place figure on flat surface; with left hand pick up loops previously held by right hand and with right hand loops previously held by left hand. Then repeat again movements 2 to 5 until tide is well in and the figure open.

Matua kalou [name of a type of eel (?)]. A progressive figure.

1. Position 1 on right hand. With left hand revolve hanging string twice, making a double cross in center, take up position 1 on left hand; proceed to opening A.
2. Thumbs, distal to index strings, distally draw back little finger ulnars.
3. Navaho thumbs. Figure is Matua kalou. (Figure 51.)
4. Drop thumbs.
5. Indices distally in little finger loops, rotate in distal direction back to position. Figure is Ui kauana. (Figure 52.)
6. Thumbs proximally draw back index radials which do not pass to little fingers.
7. Drop little fingers. Figure is Ui lalapa. (Figure 53.)

524 Te-ko-lemu-yengiyengi (The-yellow-anus).

1. Position 1.

2. Indices proximally draw back little finger ulnars.

3. Thumbs, distal to index radials, proximally draw back little finger ulnars.

4. Navaho thumbs. (Figure 54.)

[539] Work thumbs and fingers in and out to the rhythm of the chant:

Te ko lemu yengiyengi e,

The yellow anus,

Te ko lemu yengiyengi e,

The yellow anus,

Titiko i tua, titiko i tai,

Defecates at the back beach, defecates at lagoon beach,

Te ko lemu yengiyengi e.

The yellow anus.

Tava (meaning unknown). Played by two people.

First player:

1. Opening A.

2. Drop little fingers.

3. Indices proximally remove thumb loops.

4. Thumbs distally draw back proximal index ulnars.

5. Thumbs distally draw back distal index ulnars.

6. Middle fingers, distal to distal index radials, proximally draw back from ulnar side proximal index radials.

7. Navaho thumbs. Stretch right hand forward, bring left hand inward to body, turn both palms up and stretch figure. (Figure 55.)

Second player takes up figure by process called tui (to sew).

8. At end of figure held by first player's right hand, insert little fingers distally into two outer triangles (held by first player's thumb and middle finger).

9. Pass thumbs distally into and through next outer triangles and proximally up out of next outer triangles.

10. Insert little fingers into two outer radial loops held by first player's left thumb and middle finger.

First player removes all his fingers. Figure is Tava. (Figure 56.)

First player proximally inserts thumb and index of each hand into each of two outer loops of figure held by other players's thumb and index of right hand, second player dropping his hold on those two loops while taking hold proximally of each of the other two loops with thumb and index of each hand. (Figure 57.)

Together the players count: tai tava (one tava), lua tava, tolu tava, and on up through 10 tava, both players with indices

524 distally drawing back central "diamond" outer strings, releasing thumbs, and thus reproducing the same figure, Tava, for each count. Then with their hands players raise and lower the figure to the rhythm of the chant:

- [539] Pa pa talinga ti lele, (?)
 Pa pa talinga ti lele, (?)
 Te wale o Matano The house at Matano
 E kau lua te pola Has twenty thatch sheets
 Te wale o Matano The house at Matano
 E kau lua te pola. Has twenty thatch sheets

The figure is then laid on a flat surface and opened out to give the figure which resulted in movement 7, by picking up distally the distal of the two sets of loops on the dextral side of the figure and carrying these to the left. The next player now repeats movements 8 to 10, the sewing process, and the game is repeated indefinitely.

Taku-pu-lele-lua (My-hole-becomes-two).

1. Opening A.
2. Ring fingers proximally remove index finger loops.
3. Middle fingers proximally remove thumb loops.
4. Right thumb, distally on index radial, rotates back to position.
5. Left index finger proximally draws back right thumb palmar string.
6. Right index finger proximally removes right thumb loop.
7. Right thumb distally on index radial, rotates back to position.
8. Left thumb proximally draws back right thumb palmar string.
9. Thumbs, distal to intermediate strings, distally draw back little finger ulnars.
10. Little fingers, distal to intermediate strings, proximally draw back thumb ulnars.
11. Indices distally into triangles formed by index radial and ulnar strings with palmar strings.
12. Middle fingers distally into oblongs formed by middle finger radial and ulnar strings and palmar string.
13. Ring fingers distally into oblongs formed by ring finger radial and ulnar strings with palmar strings.
14. Drop little fingers and thumbs. This is the first "hole". (Figure 58.)
15. Drop indices for the second hole. (Figure 59.)

Te-pu-a-loto (a canoe name).

1. Double the string and loop it over thumbs.
2. Indices distally draw back thumb radials.

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3. Right thumb proximally draws back left thumb radial-palmar string.
4. With teeth pick up right thumb double proximal strings from distal side, carry these over right thumb and to center of the figure, retaining hold with teeth.
5. Indices distally into thumb loops, rotate back to position.
6. Middle and ring fingers press down from ulnar side on index finger distal ulnars.
7. Release mouth strings. (Figure 60.)
Open by releasing thumbs and indices. (Figure 73)

Te-itu-wala-kula (pandanus-fruit-with-ripe-keys).

1. Position 1.
2. Pass right hand dorsally through left hand loop and left hand dorsally through right hand loop.
3. Indices proximally pick up opposite hand palmar strings.
4. Slip index loops over wrists.
5. Indices distally pick up little finger radials and proceed distally into thumb loops, rotating in ulnar direction back to position.
6. Drop thumbs.
7. Thumbs proximally remove index finger loops.
8. With opposite hand, pick up double wrist loops and place them across palms behind thumbs and little fingers.
9. Repeat 5.
10. Drop little fingers.
11. Little fingers proximally remove index finger loops.
12. Indices pass from ulnar-proximal side below string running parallel and ulnar to ulnar thumb string, over the intersecting diagonal string, and under ulnar thumb string.
13. Drop thumbs and without stretching figure pick up proximally the distal index finger radials hanging down toward thumb. (Figure 61.)

For the lui of this figure, drop little fingers.

Te-tala-o-te-yamayama [The-story-(?)-of-the seaweed].

1. Opening A.
2. Thumbs, distal to index strings, proximal to little finger strings, pick up from ulnar side, little finger ulnars, returning to position proximal to little finger radials.

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3. Right little finger, proximal to right index strings, proximally draws back through its own loop right thumb ulnar.
4. Left little finger, proximal to left index strings, draws back through its own loop, from radial side, left index radial.
5. Navaho thumbs inversely: with mouth, draw back distal thumb radials under proximal thumb radials and drop them over on the ulnar side of the thumbs.
6. Indices distally remove thumb loops.
7. Counting upward on either side of the figure from little finger ulnars (which are counted 1), insert thumbs under second, over third, and under fourth strings in figure, drawing back strings 2 and 4. (Figure 62.)
8. Navaho thumbs. (Figure 63.)

For the lui of this figure, drop distal index loops.

Kumete (Food bowl).

1. Opening A.
2. Indices distally into little finger loops, rotate back to position, dropping little fingers.
3. Middle fingers distally press downward on index ulnars.
4. Drop thumbs carefully so that thumb radials fall to the sides of and below figure, forming two central diamonds in figure.
5. Insert thumbs through lower outer triangles into diamonds, drawing back lower outer diamond strings. (Figure 64.)

To open, drop thumbs.

Kupenga (Fishing net).

1. Position 1 on left hand.
2. Loop other end of string around big and second toes of left foot.
3. With right hand draw back string passing behind toes between the toes and place it on left index finger.
4. Place right index proximally on left index ulnar string passing under left little finger ulnar, carrying back the latter.
5. Rotate this latter string (little finger ulnar) under index ulnar.
6. Place right thumb behind, ulnar to, left index ulnar, drop right index, and carry right thumb distal to left index radial.
7. Repeat operation on index radial and thumb strings, inserting thumb proximally into loop remaining.

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8. With right hand draw back from second toe the ulnar second toe string and loop it over little finger.
9. Repeat movements 4 to 7, as often as desired, each time increasing the net's length. (Figure 65.)

The number of warp strings will depend on the length of the original string.

10. Remove all loops off left thumb and hold. Remove loop off left big toe and slip through thumb loops, catching with each thumb an end of the loop slipped through. Repeat this process with little fingers and 2nd toe loops. Then stretch loops apart, spread net meshes, and display on hands. (Figure 66.)

Yele moa (Tie the chicken). Trick figure.

1. Place string around neck. Hold hanging string in both hands. With right hand loop string once around the neck and draw tight.
2. Place sinistrally hanging string over the palm of the left hand so that the string passes behind thumb and little finger and across palm.
3. Pick up dextrally hanging string with right hand and loop it over left hand, the string passing from the radial side parallel to the first string, behind thumb and little fingers, and across palm.
4. Drop little finger on left hand. With fingers of both hands, pick up loop hanging from thumb and place it over the head.

Pull on the loop hanging low on the chest and the string will disengage itself from the neck. As the demonstrator pulls he says, "Motu te ua" (Severed the neck); watchers also call this out when they see someone doing the trick incorrectly.

Hand slip trick. Nameless.

Hold one end of loop in left hand. Right hand passes from radial side through the loop, rotates with wrist turned down and to the right, behind and around dextrally hanging string, passes radially around sinistral hanging string, and reenters loop from ulnar side. Draw right hand out and the strings fall off.

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Figure 1. Te-Imu-o-Wale-Puapua

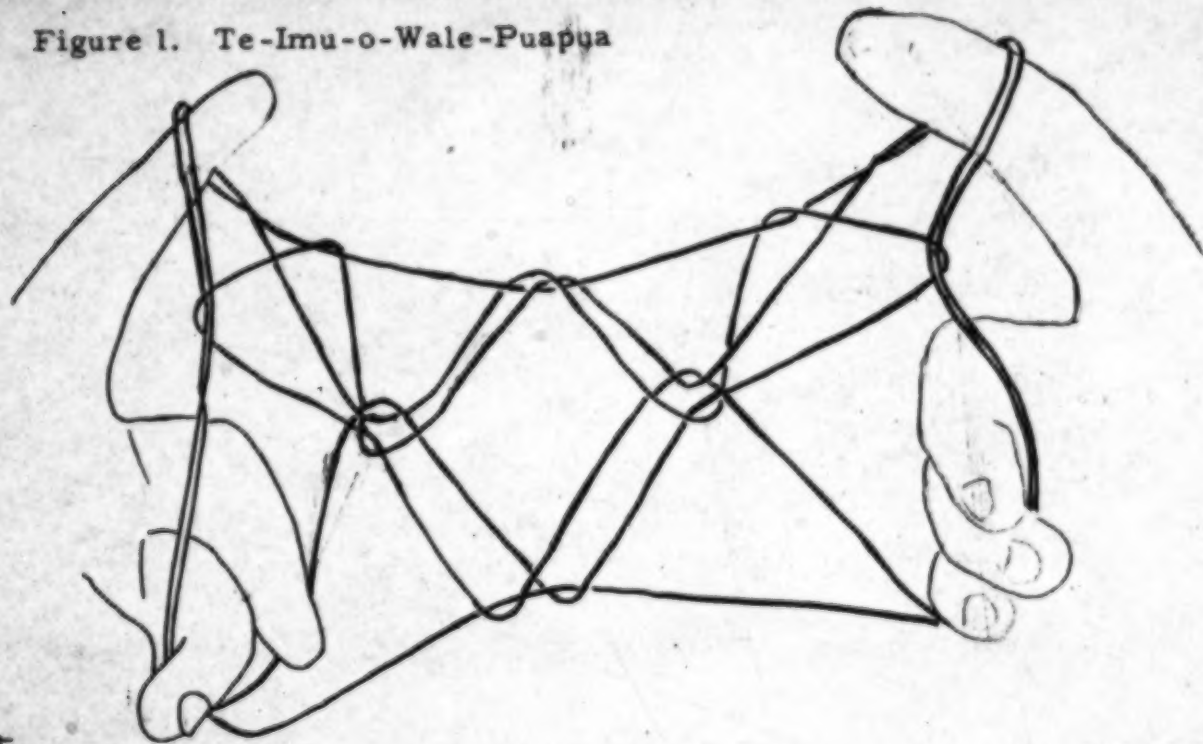


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Pukapuka

4: Beaglehole 5 (1934-5) 1953

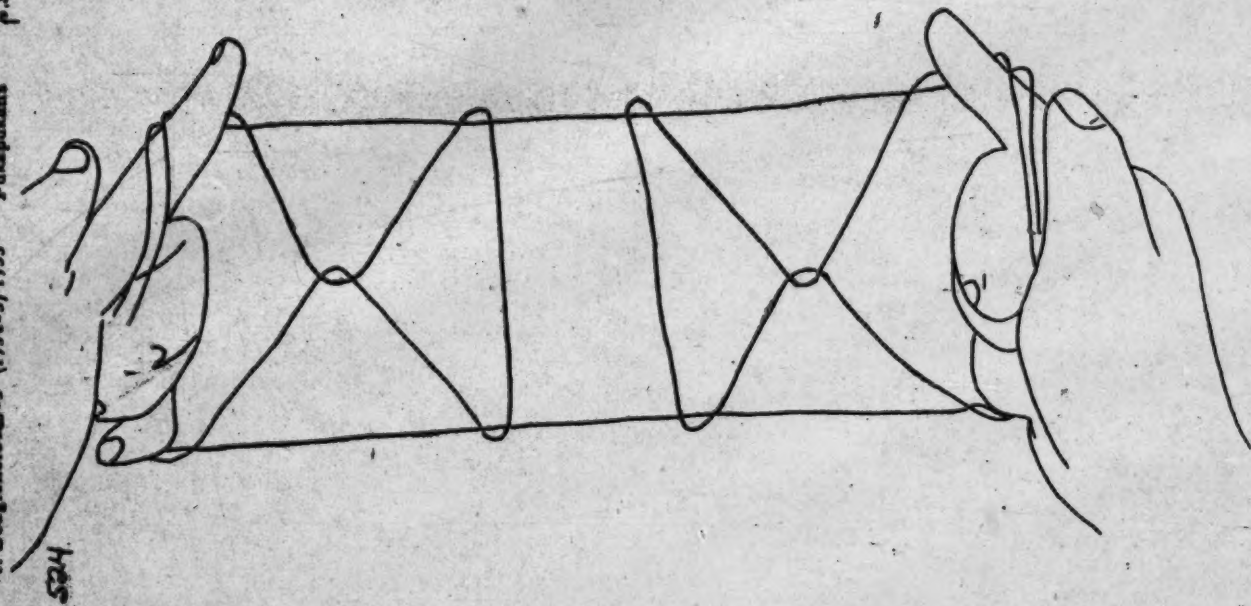


Figure 3. Te-Imu-o-Tima

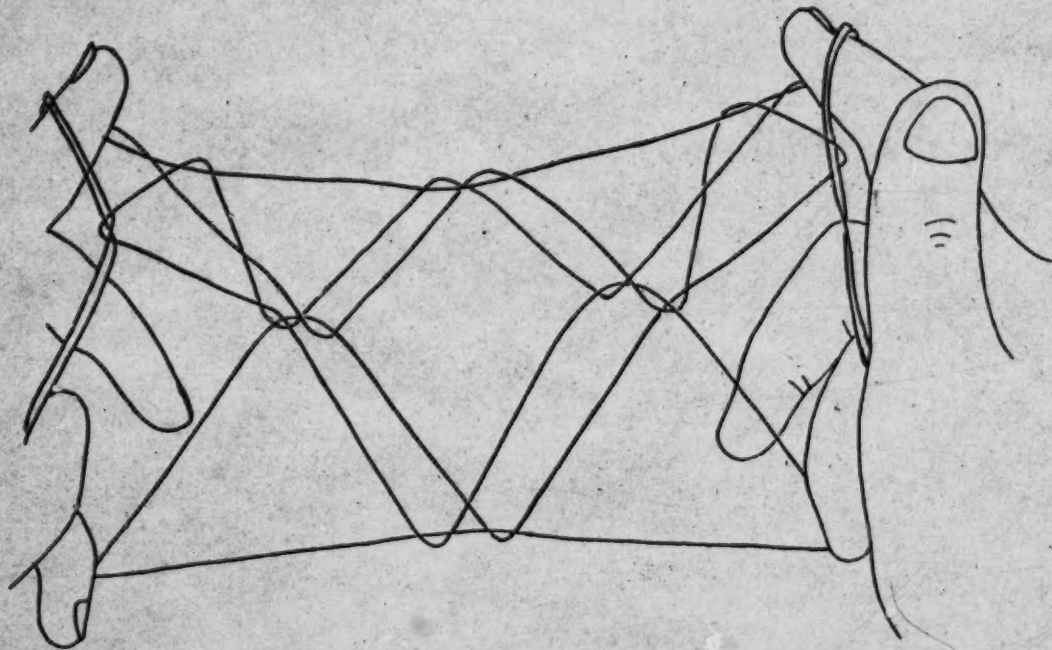


Figure 4. Te-Imu-o-Tima (Secondary figure, lui)

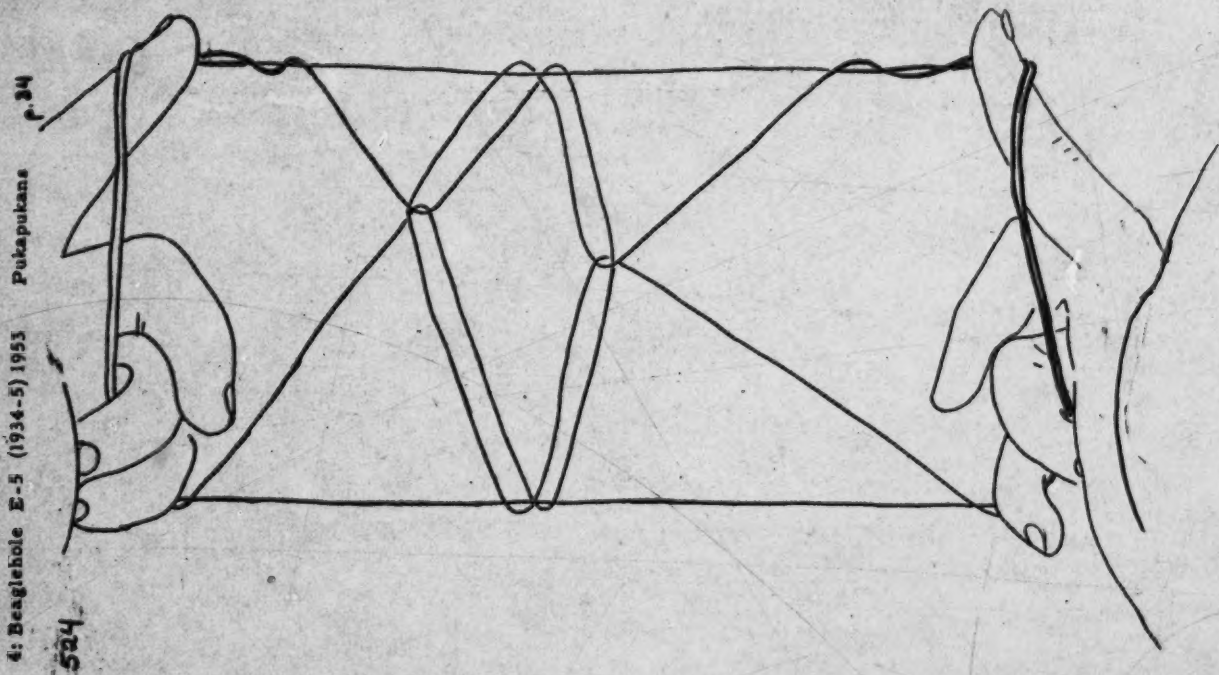
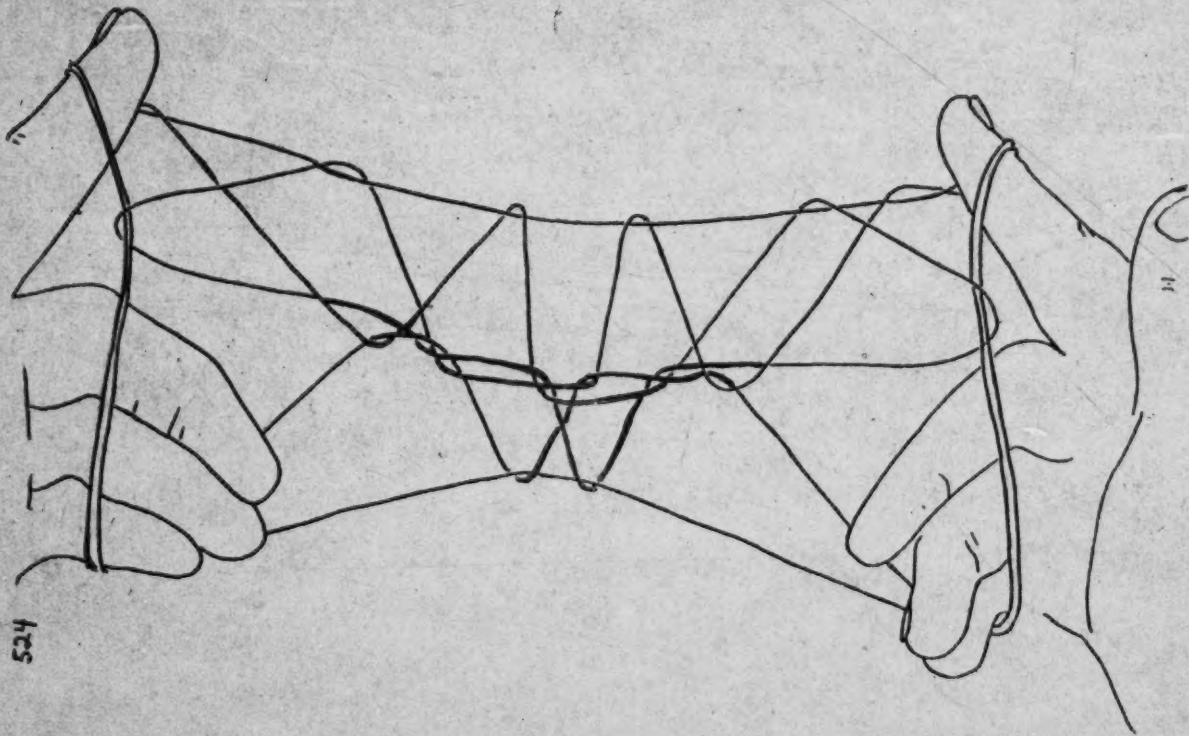


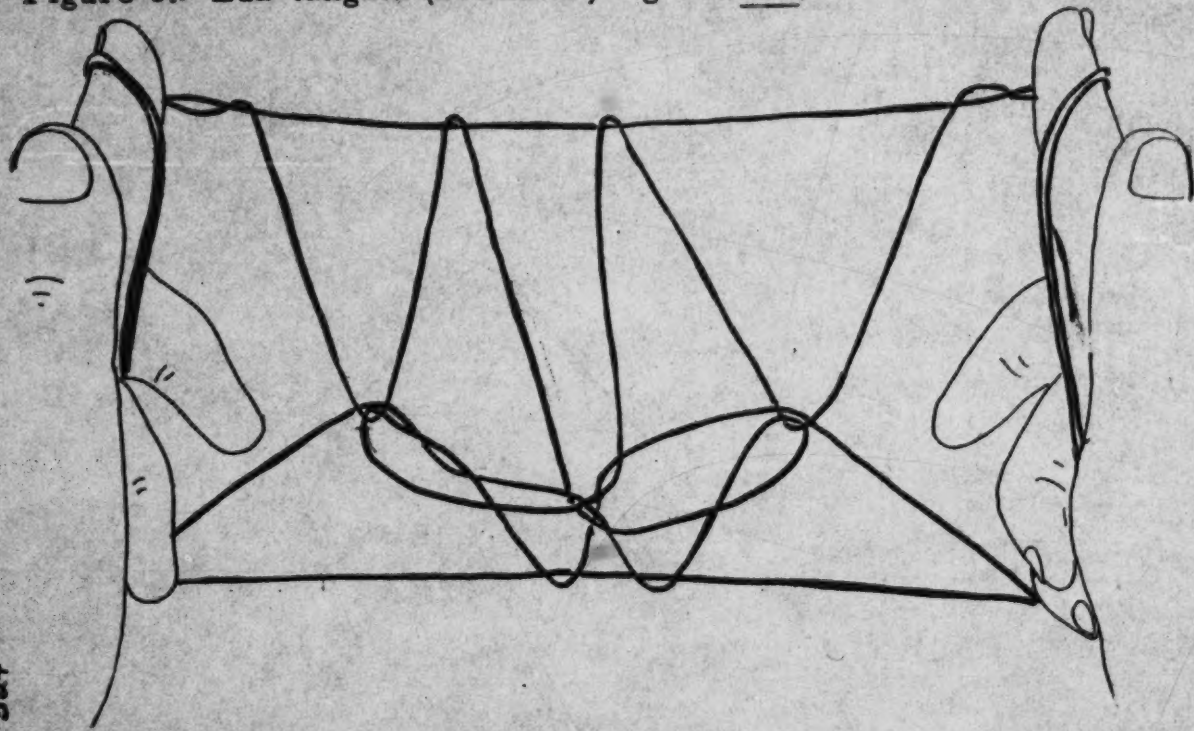
Figure 5. Lua-tangata-wetu-i-te-akau

4: Beaglehole-15'E-5 (1954-5) 1953 Pukapukan



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Figure 6. Lua-tangata (Secondary figure, lui)



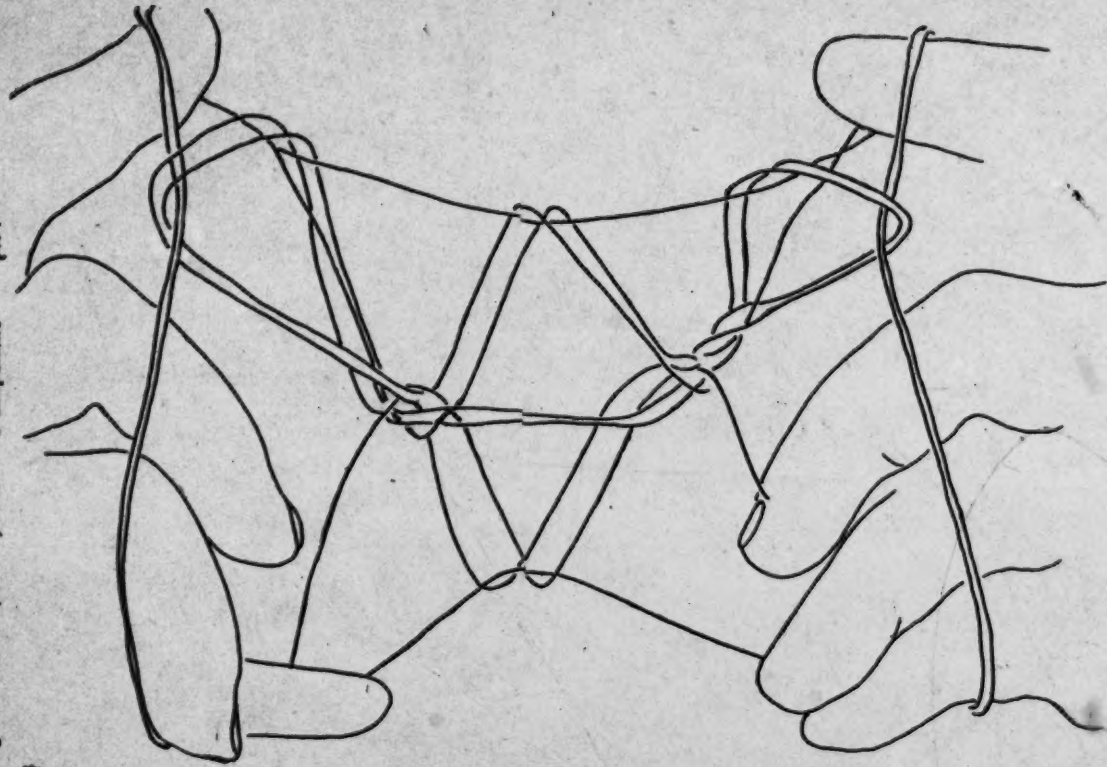


Figure 7. Te-ikapaetai

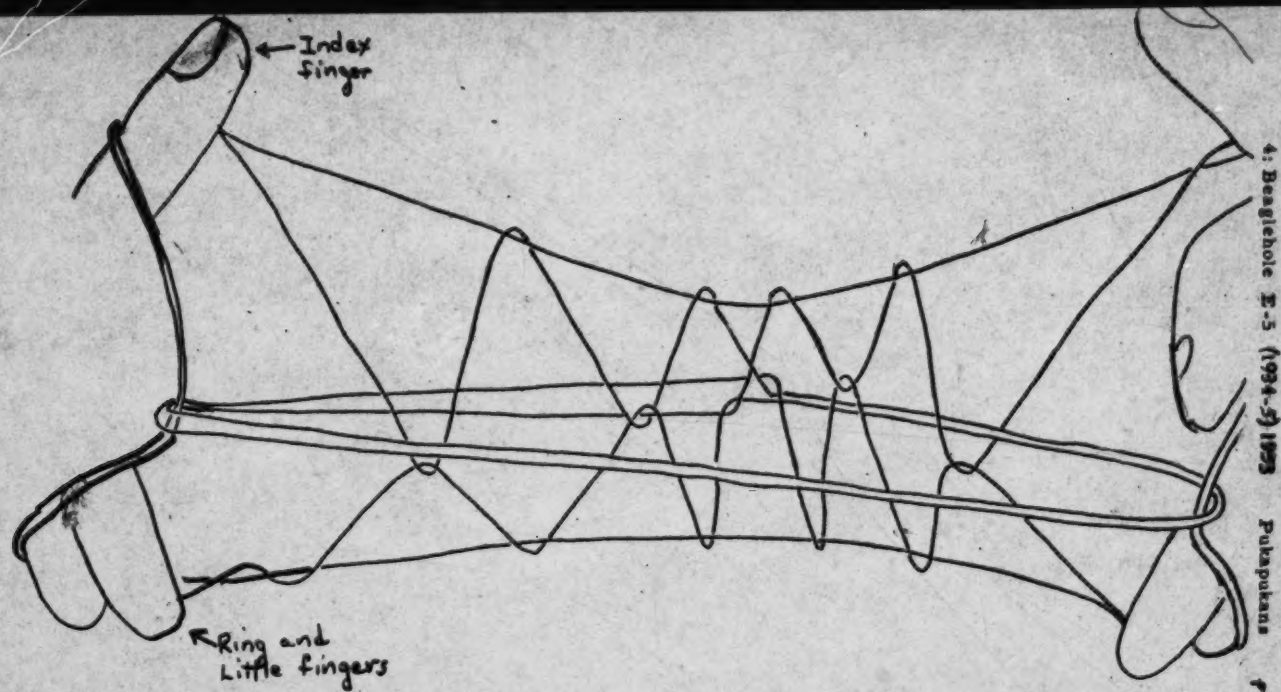
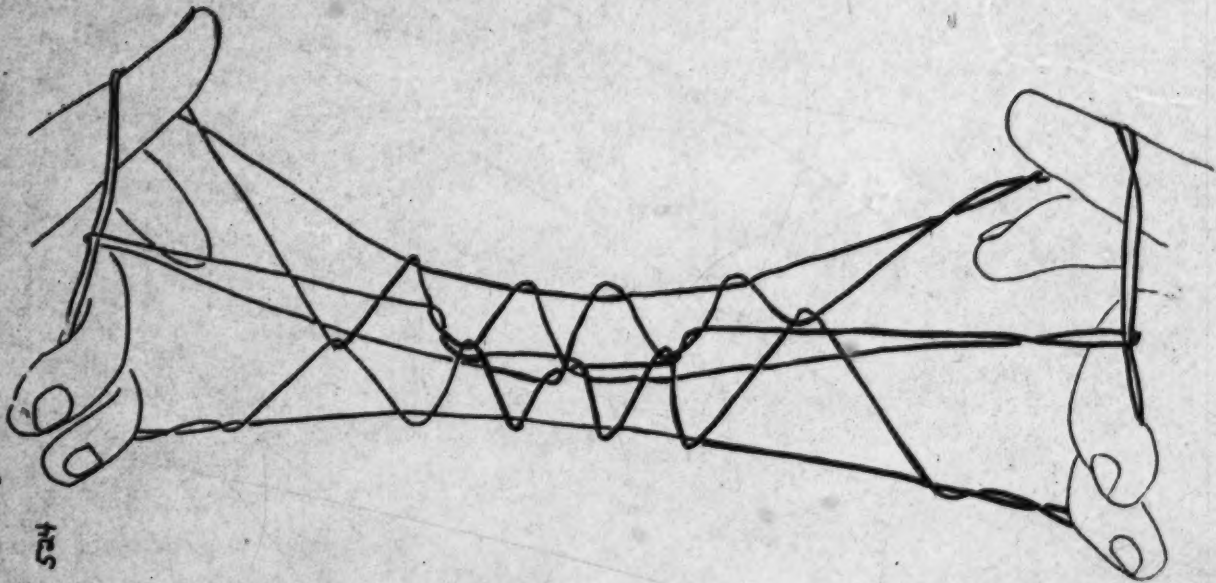


Figure 8. Te-papanga-o-te-waulua

Figure 9. Te-langi-loa



4: Beaglehole-49, E-5 (1934-5) 1953 Pukapuka

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Figure 10. Te-langi-loa (Secondary figure, lui)

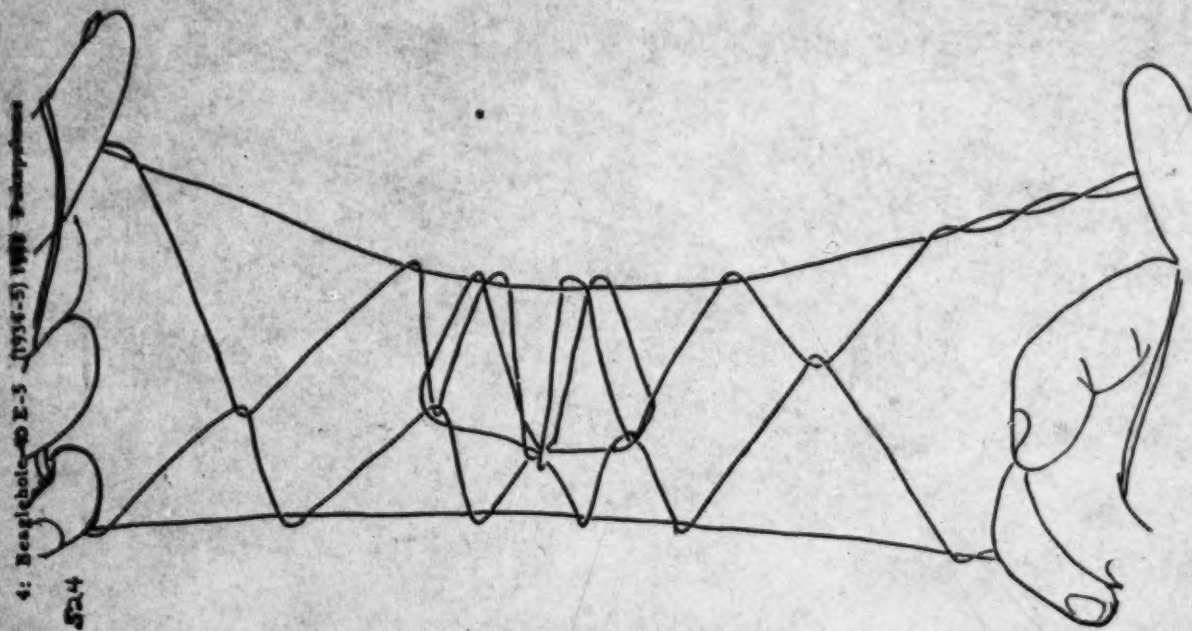
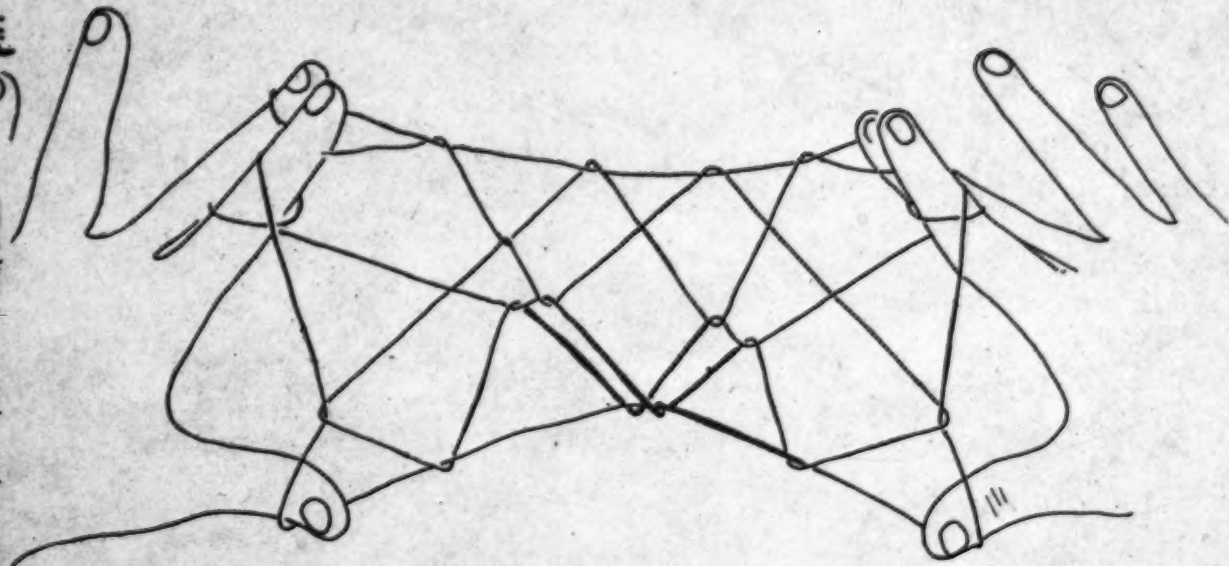


Figure 11. Taku-laukape



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4: Beaglehole E-3 (1934-5) 1983

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Figure 12. Na-wiwi

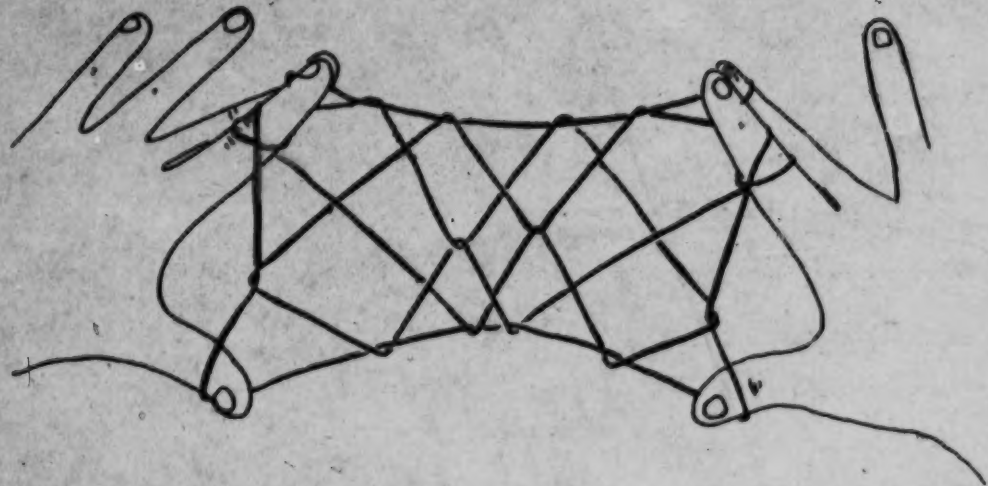


Figure 13. Te-va-o-Manuyiki-ma-Lakawanga

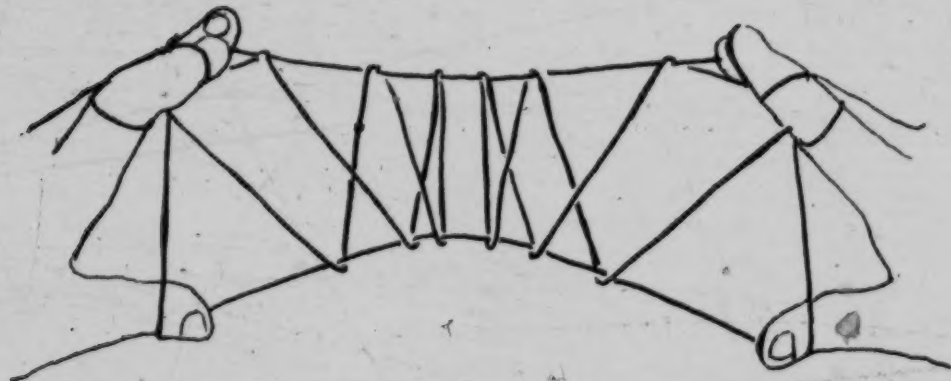


Figure 14. Te-pitopito-i-Kolo

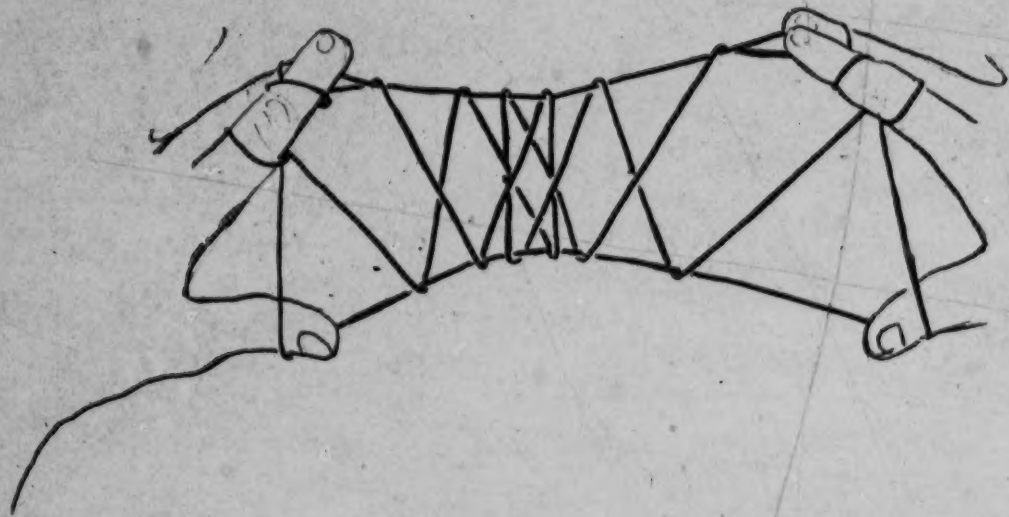


Figure 15. Te-kapu-ta-ika

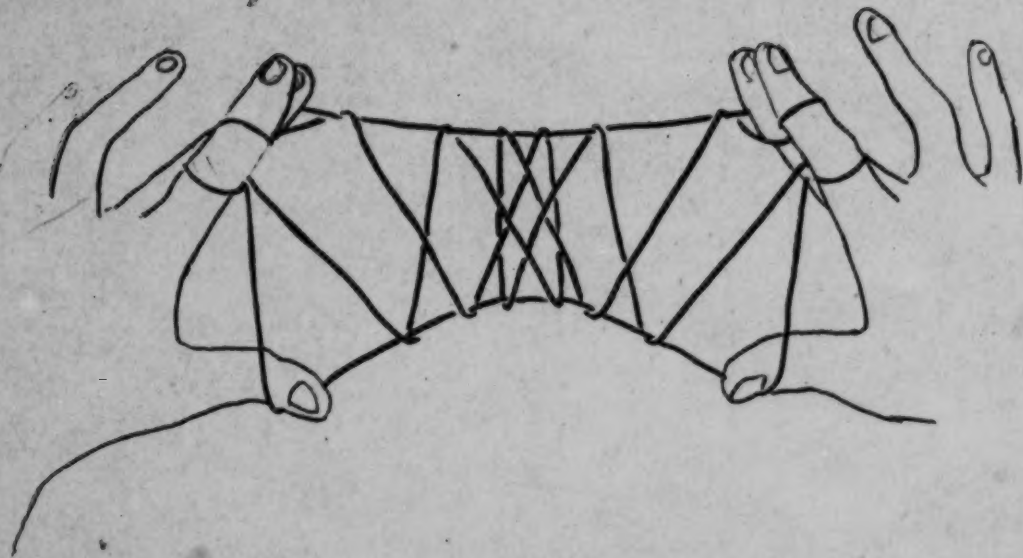


Figure 16. Kau-a-pulaka

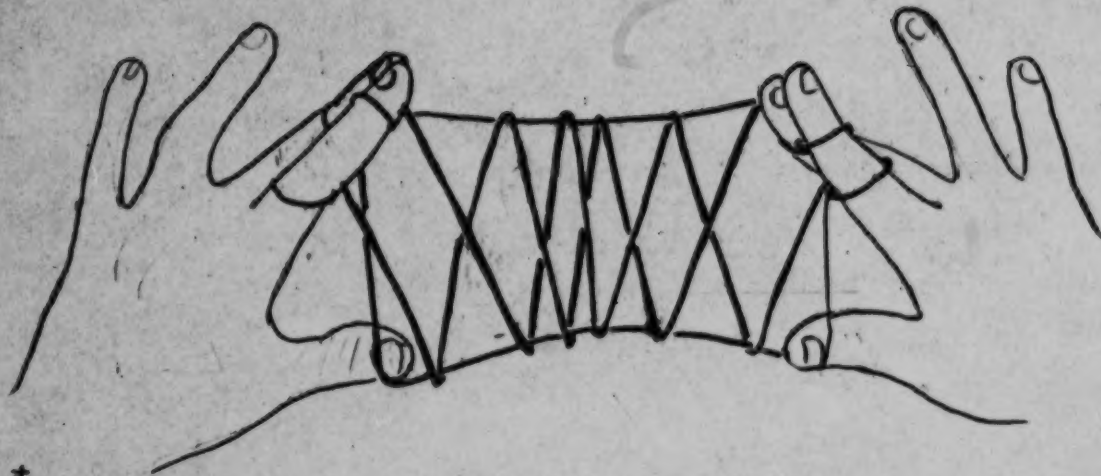
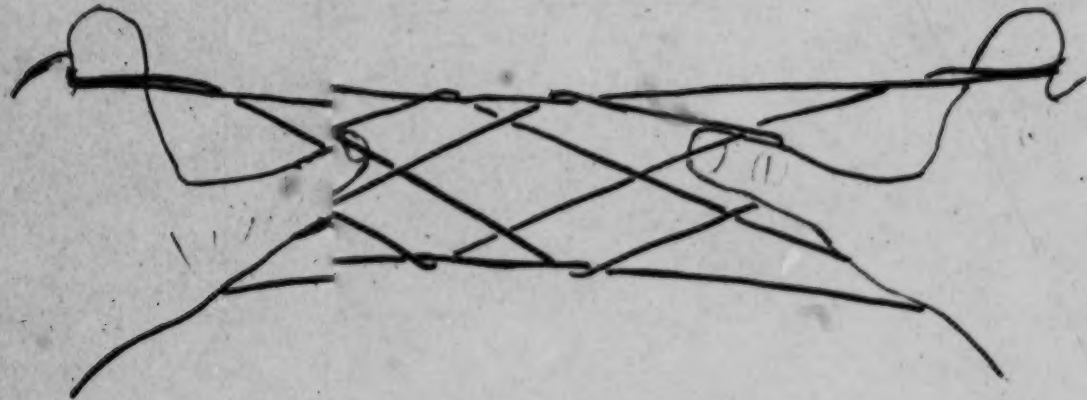


Figure 17. Te-pona^{nau}



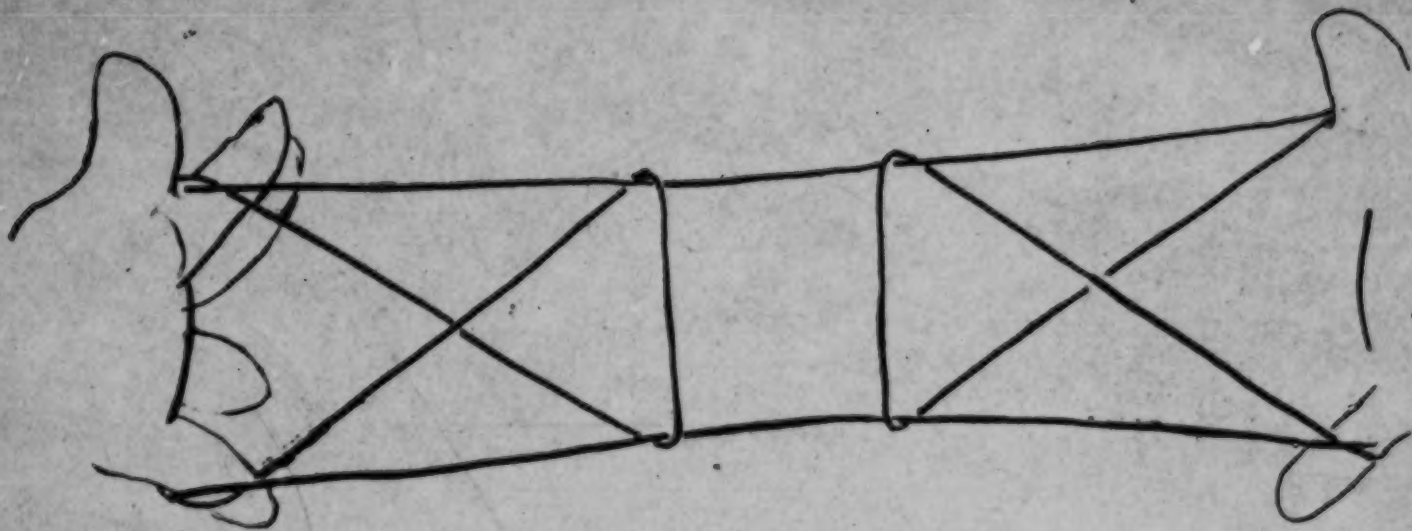


Figure 18. Te-ponaunau (Secondary figure, lui)

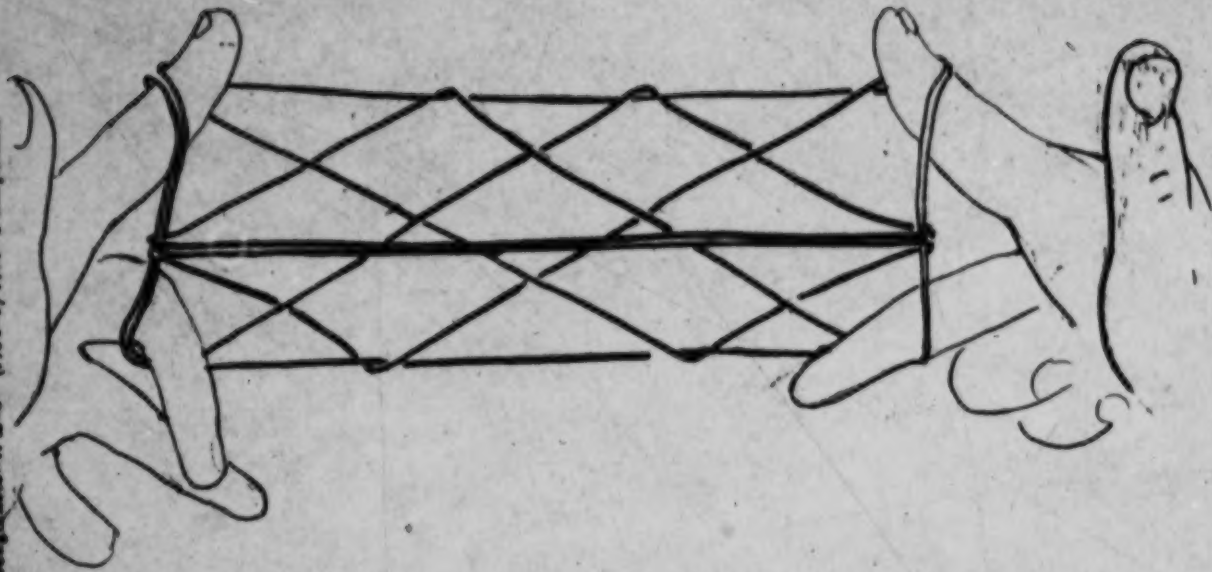
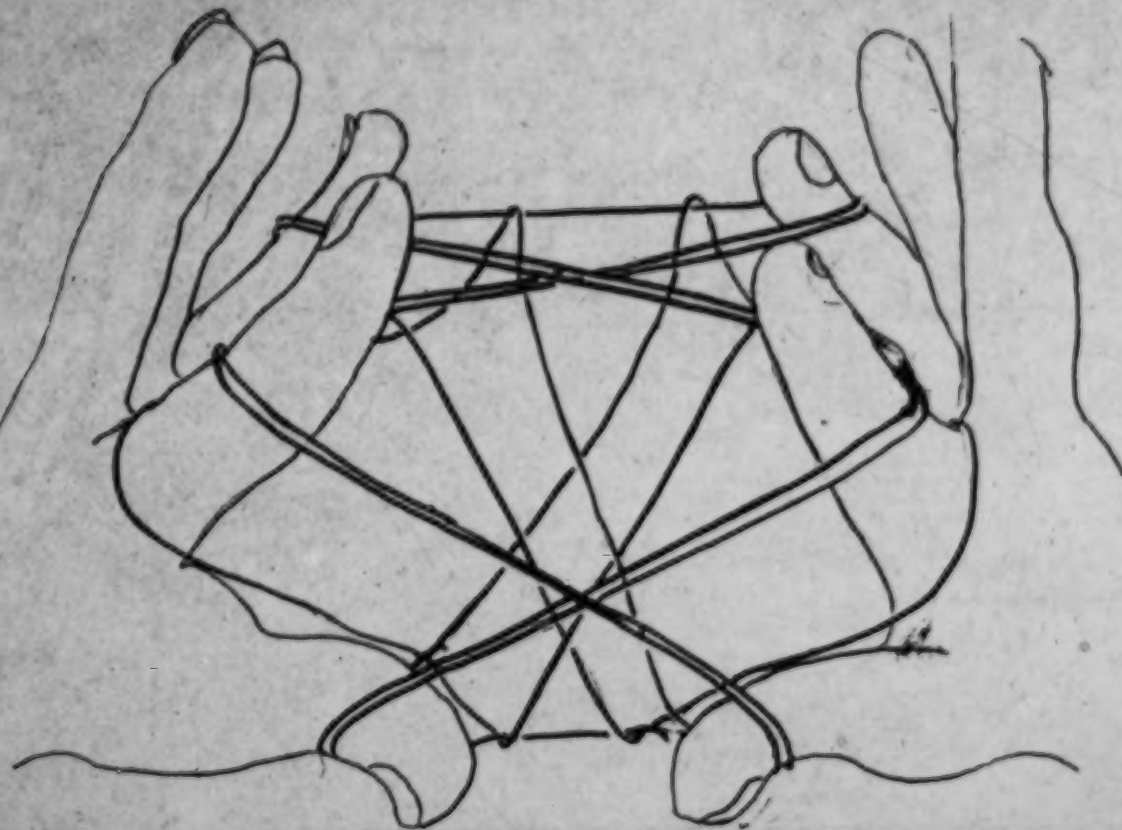


Figure 19. Katatuna

Figure 20. Te-pu-o-Mumumaveka (Movement 7, a three-dimensional figure)



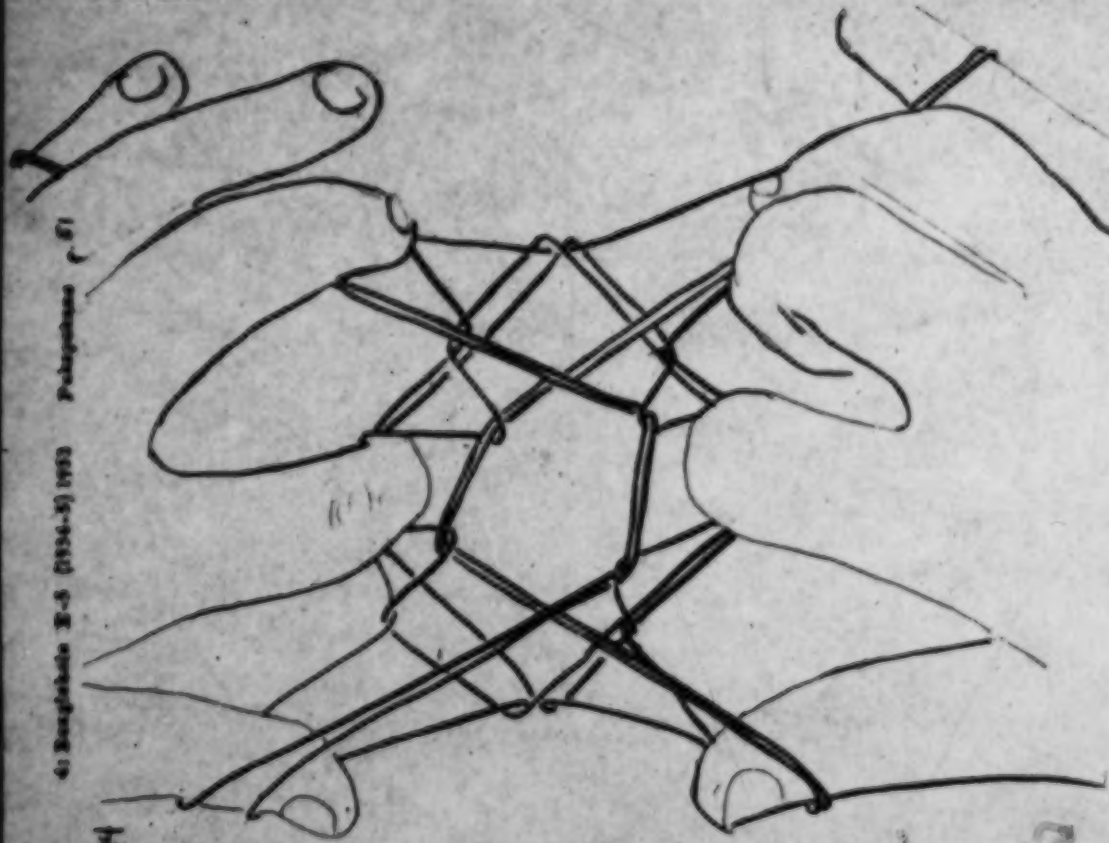


Figure 21. Te-pu-o-Mumumaveka (Completed figure)

Figure 22. Te-matangi-yauleka (made by method 1 a)

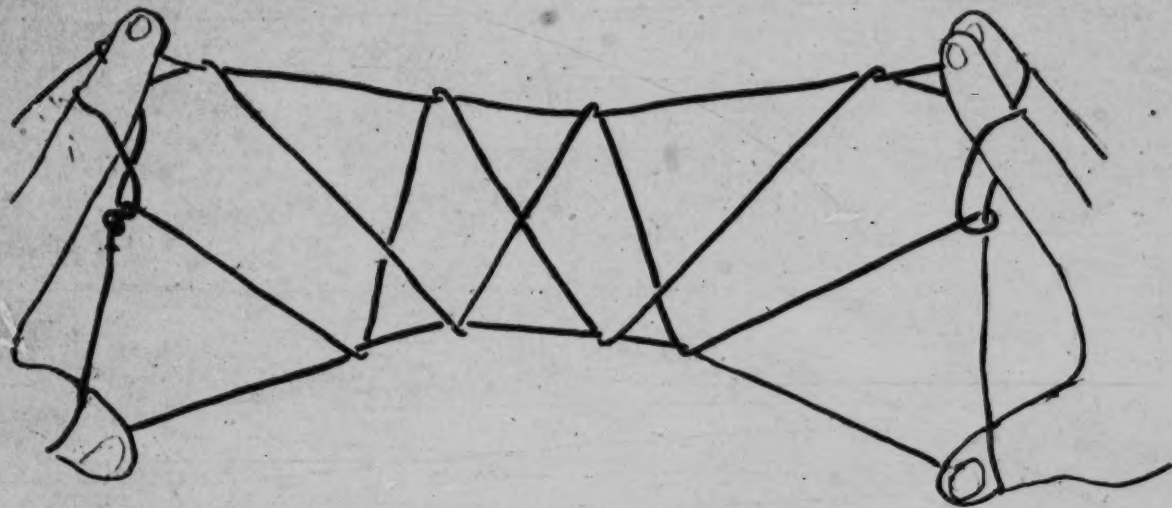


Figure 23. Te-matangi-yauleka (made by method Lb)

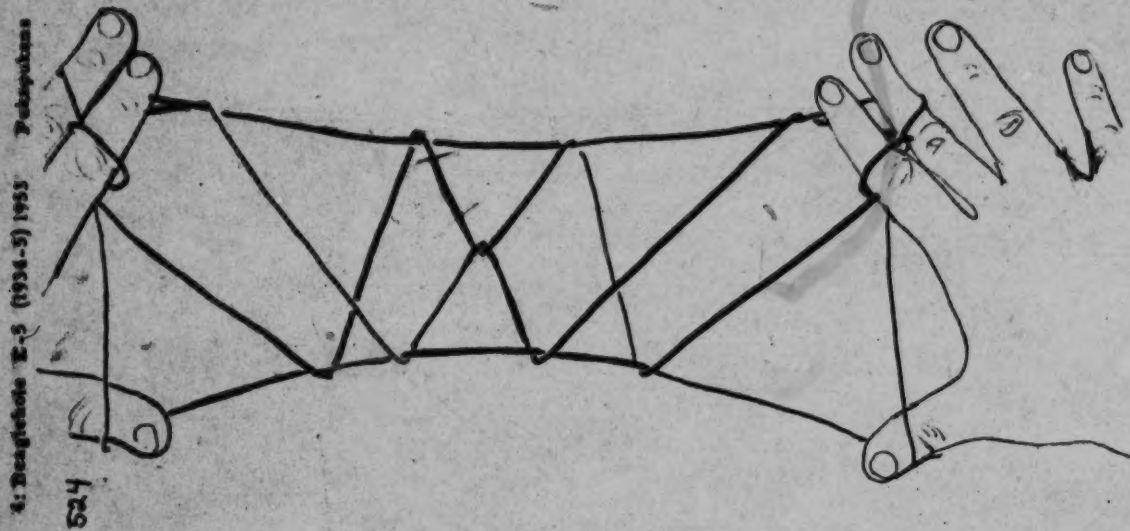


Figure 24. Te-matangi-yauleka (made by method 2)

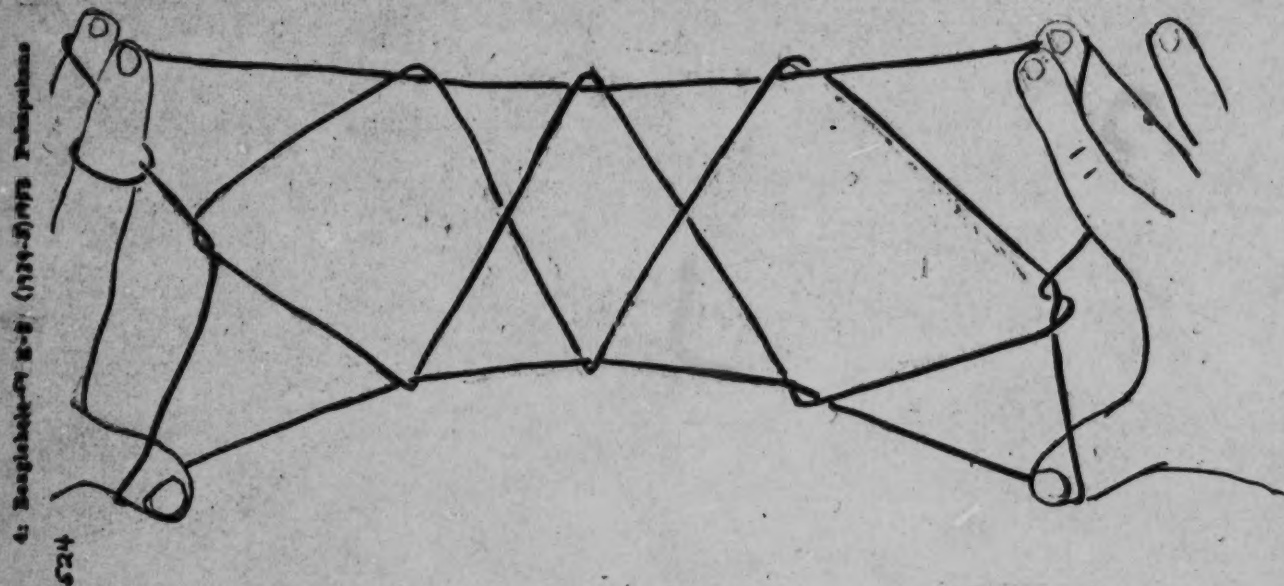


Figure 25. Te-matangi-tavili

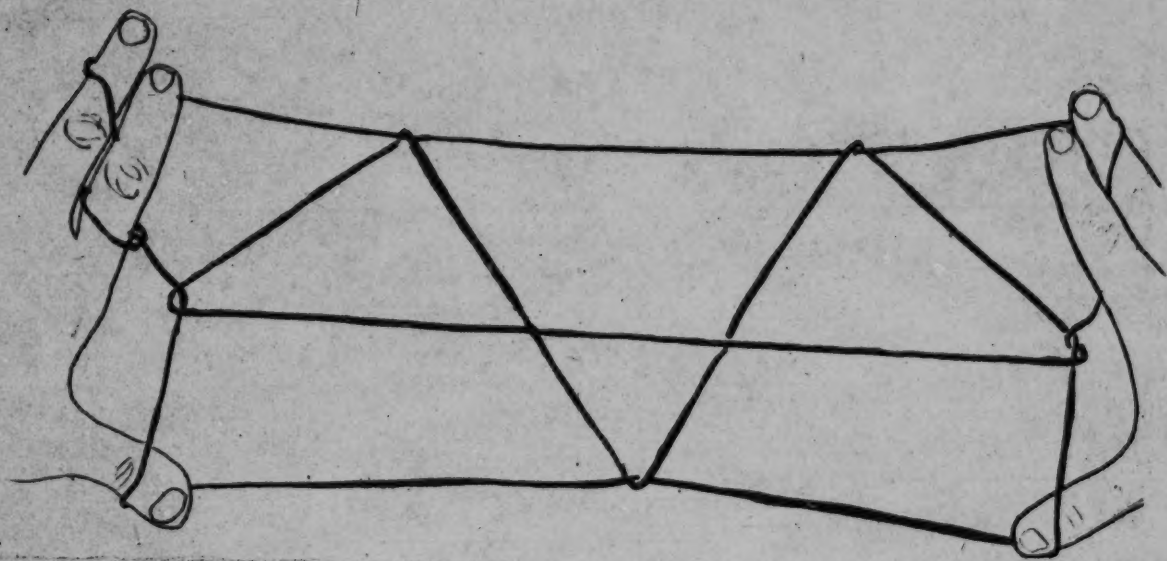
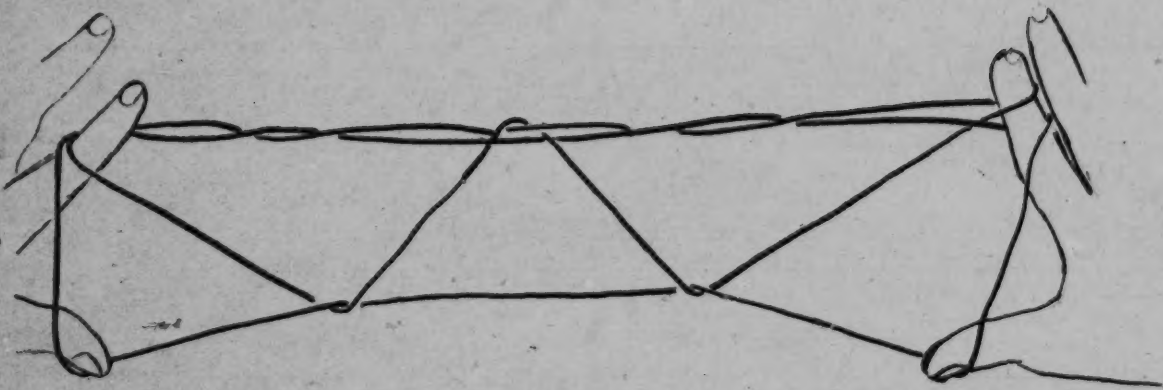


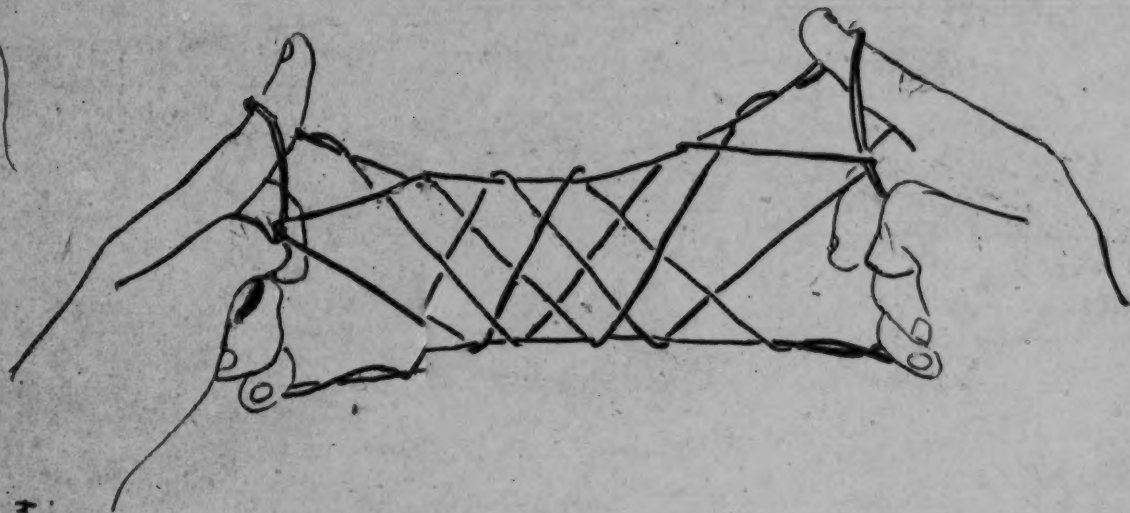
Figure 26. Te-matangi-taulele



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Figure 27. Wala-ola



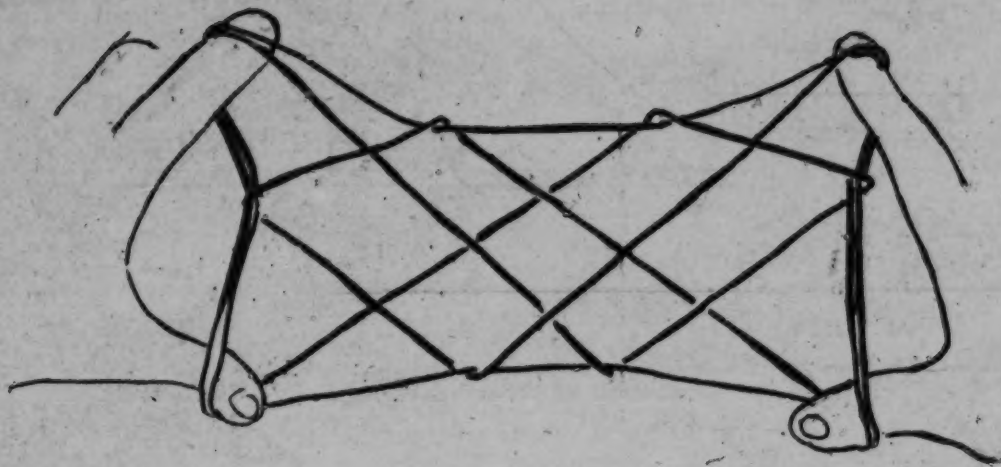


Figure 28. Wala-yila-wua

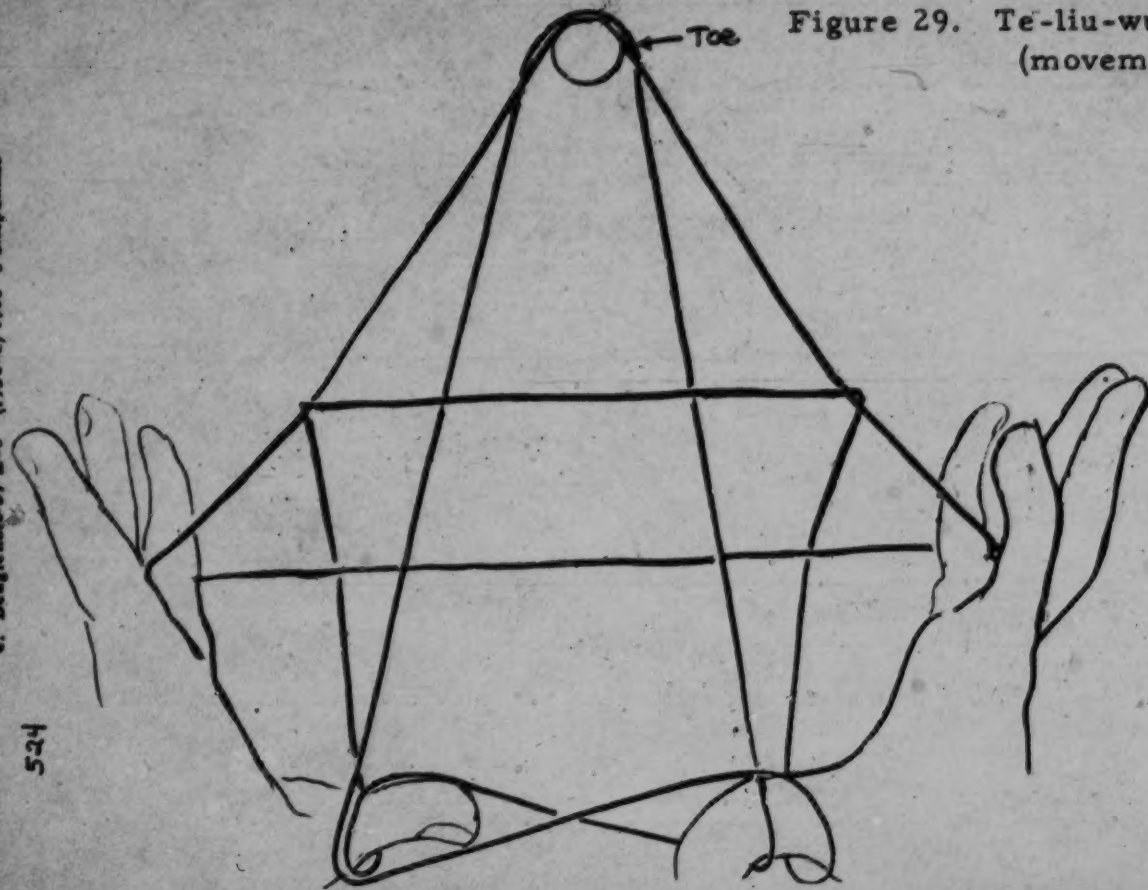


Figure 29. Te-liu-wuwuli-ki-lalo
(movement 6)

Figure 30. Te-liu-wuwuli-ki-lalo (Movement 7, showing the pickup)

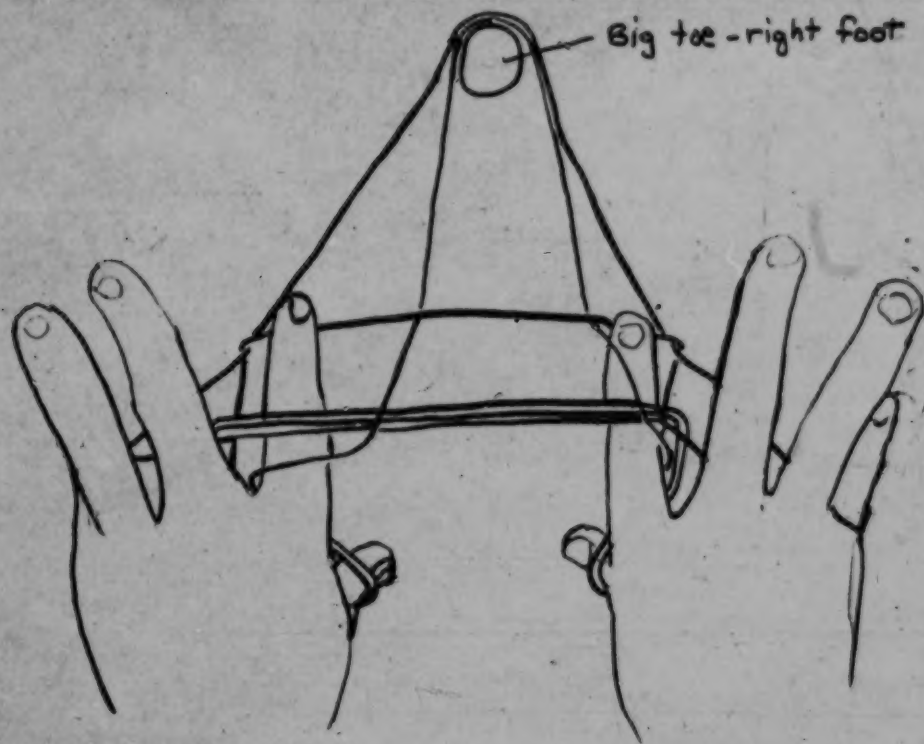


Figure 31. Te-liu-wuwuli-ki-lalo (the completed three-dimensional figure)

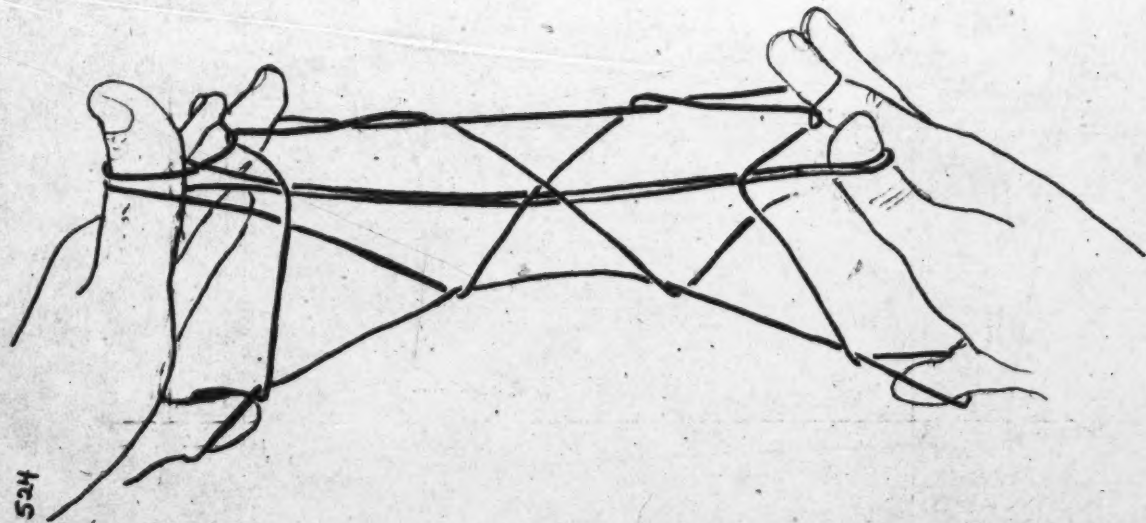
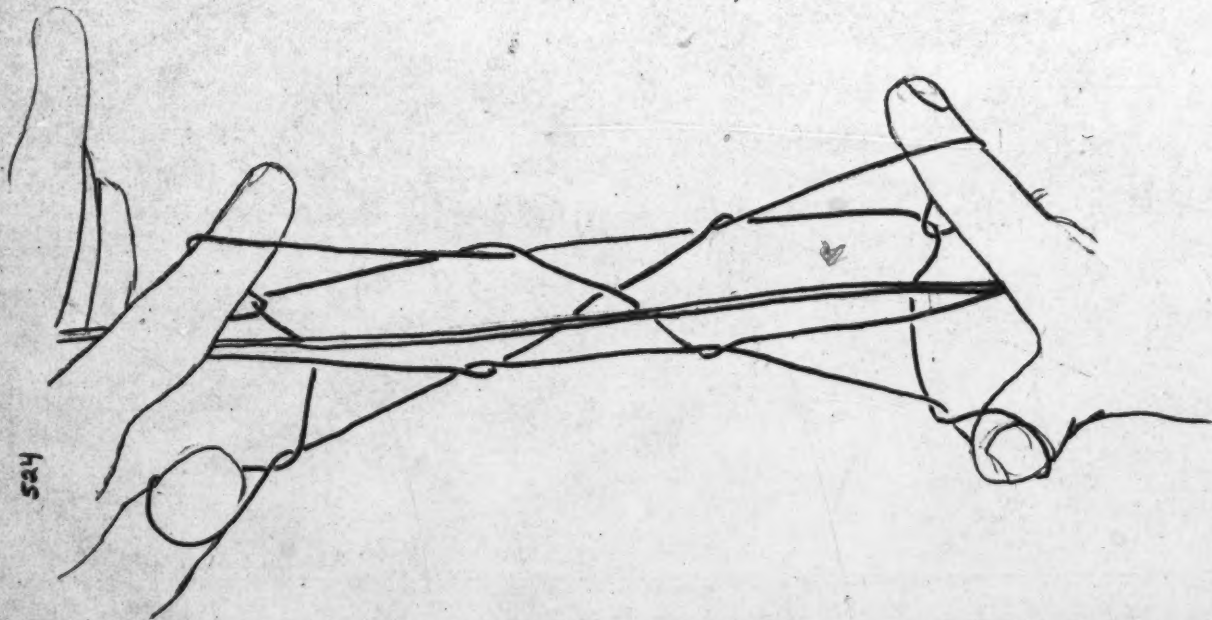


Figure 32. Te-liu-wuwuli-ki-lunga

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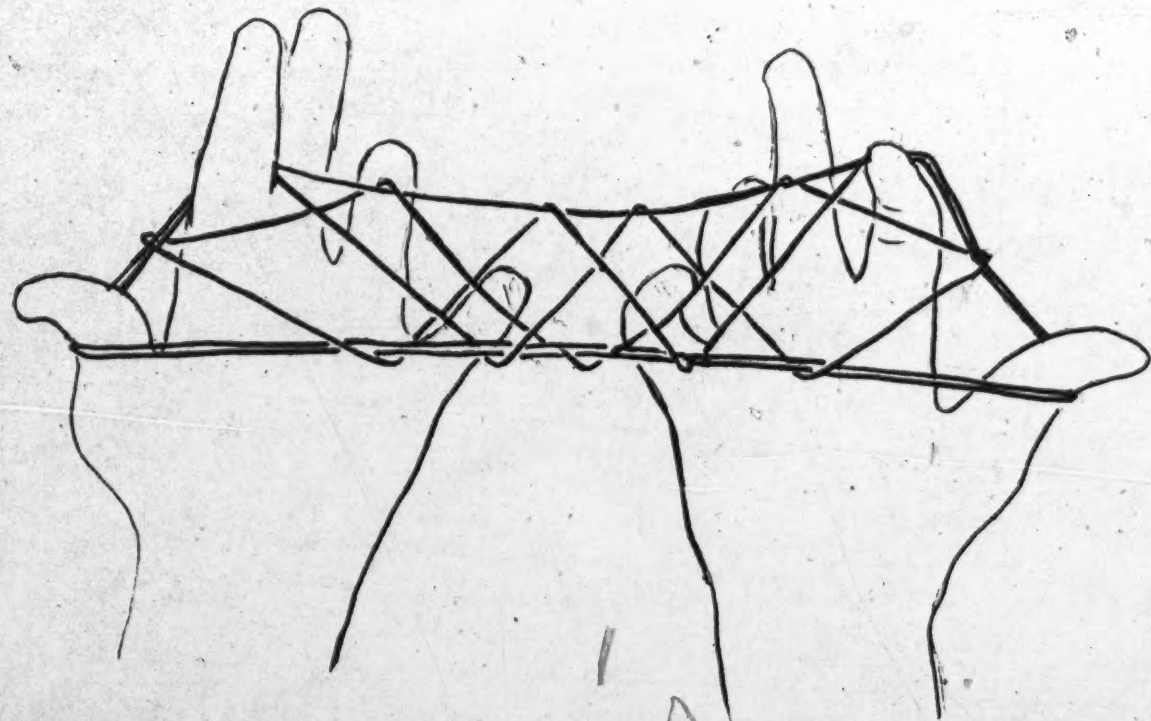


Figure 33. Paikirole (Movement 11, Kiti-kiti-polo-iti). Figure also shows insertion of little fingers, movement 12.

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Figure 34. Paiokiole (Movement 14, Taoa-kula)

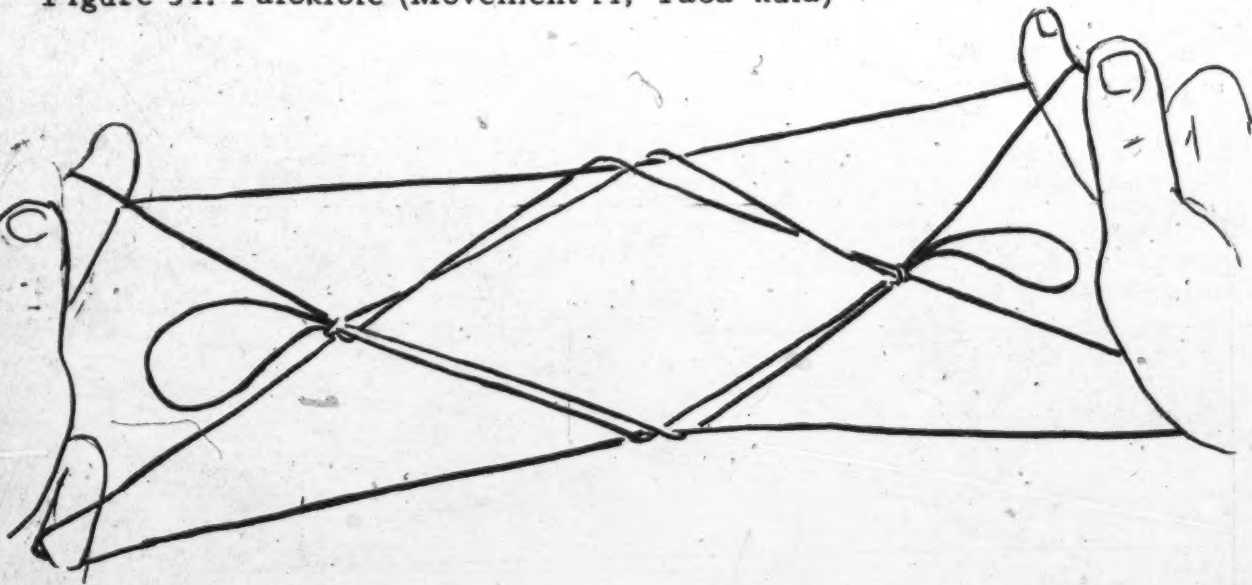


Figure 35. Paikirole (Movement 15, Langai-tawola)

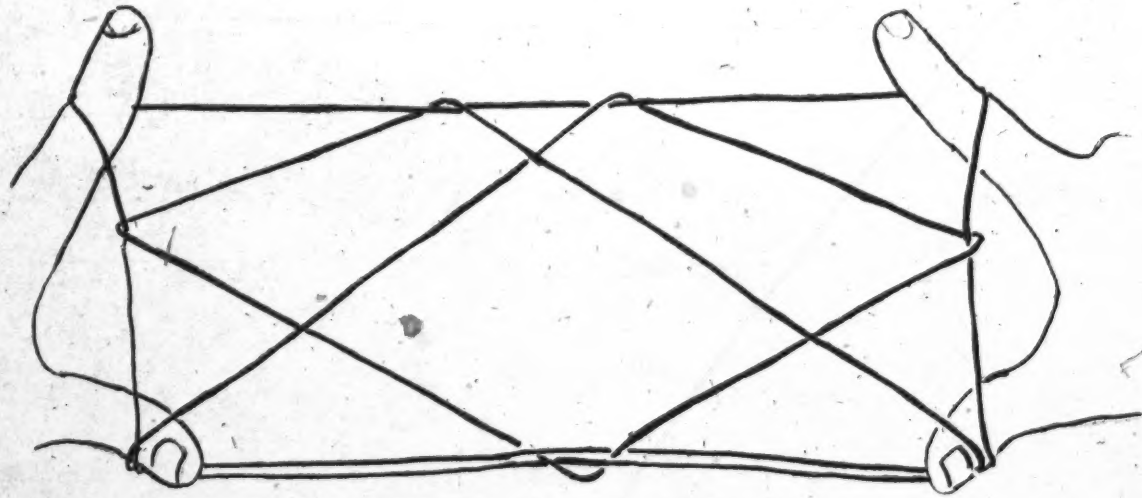
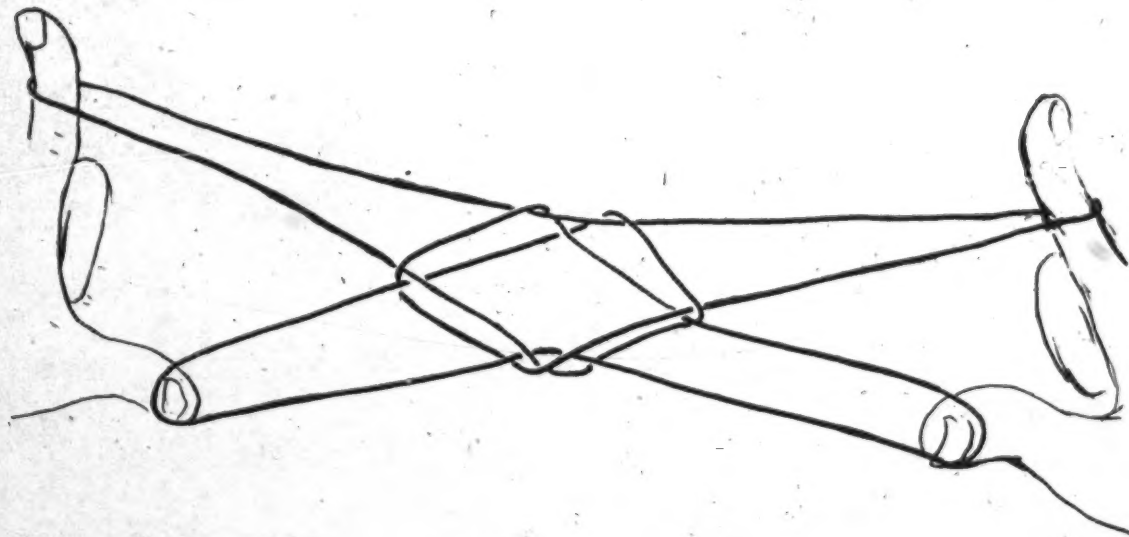


Figure 36. Paickiole (Completed figure)



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Figure 37. Tikonikoni (Movement 10)

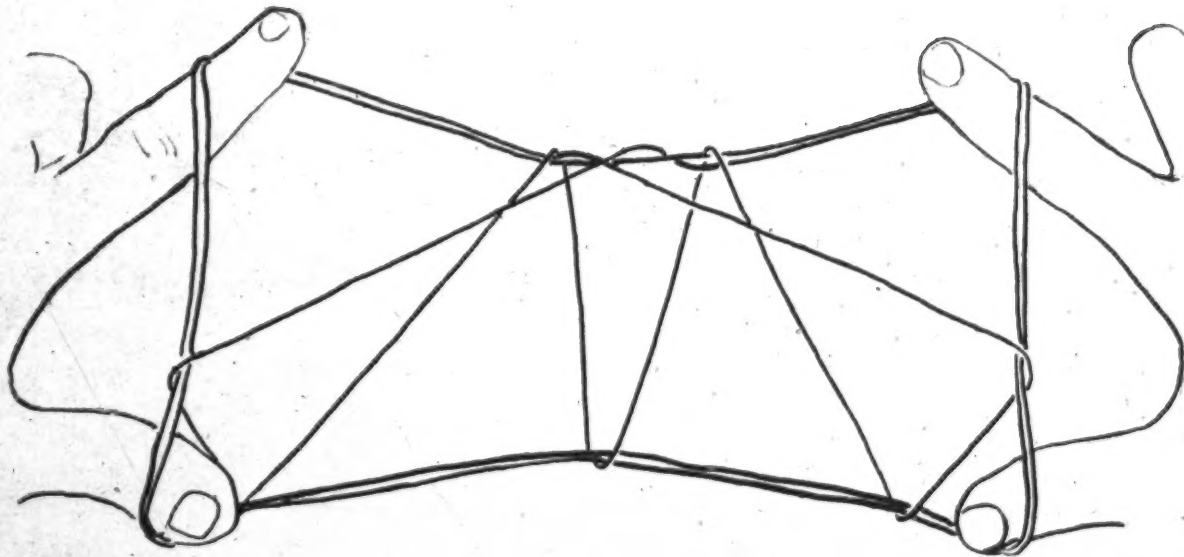


Figure 38. Tikonikoni (Completed figure)

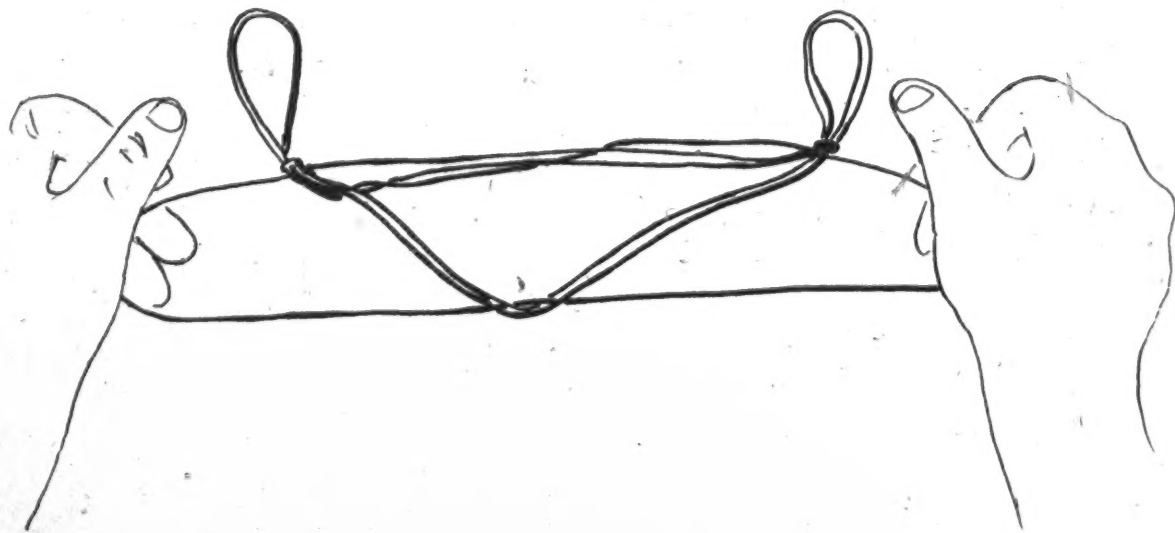


Figure 39. Te-tau-lunga

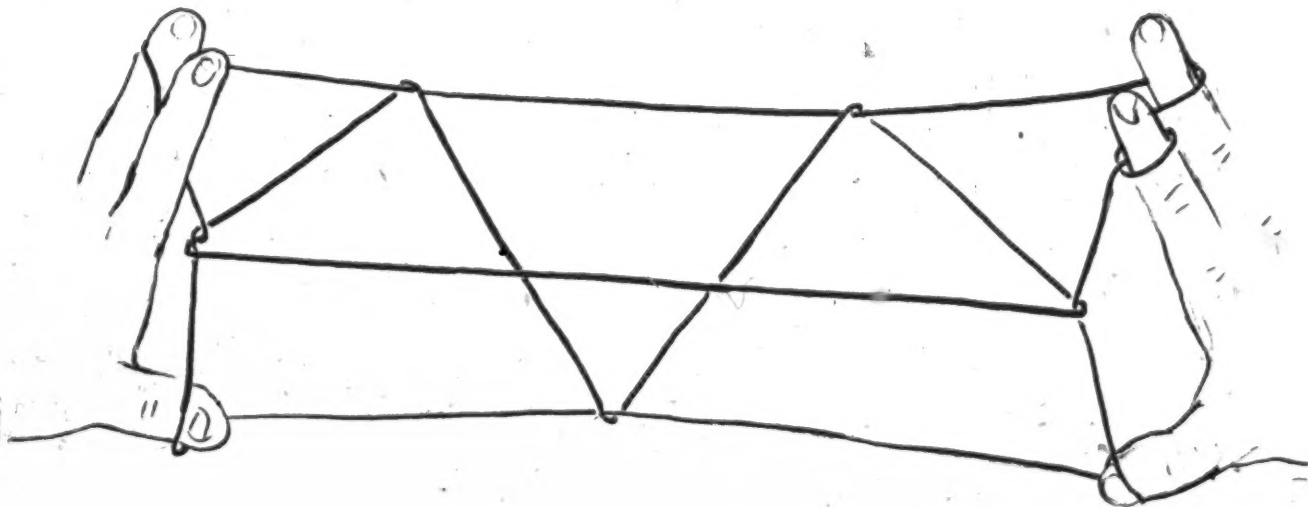
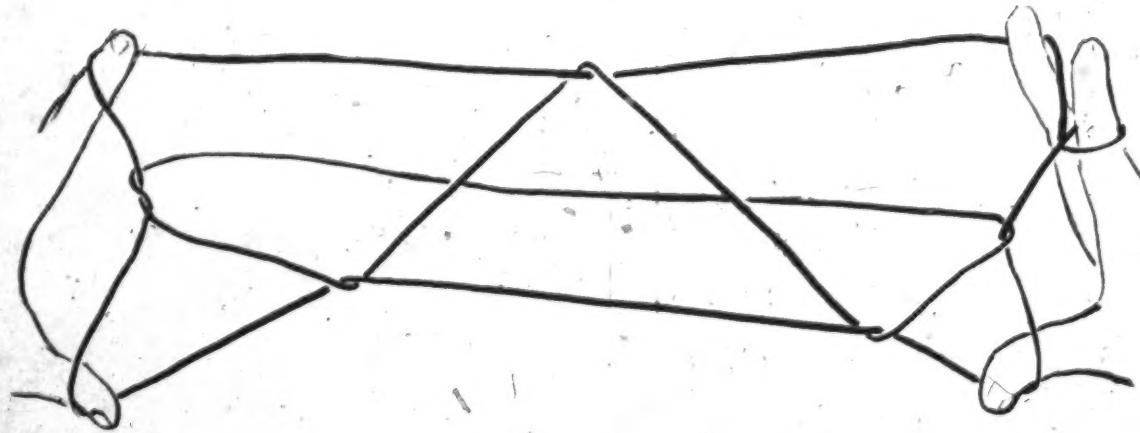


Figure 40. Te-tau-lalo



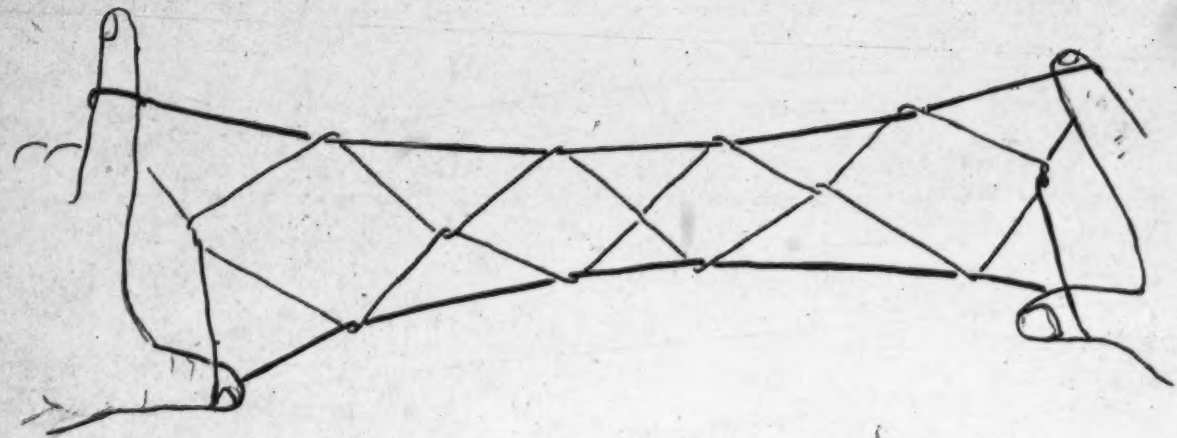
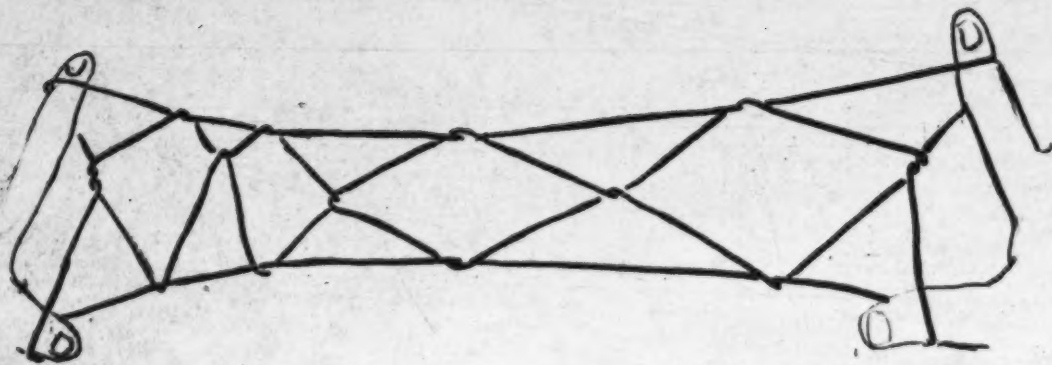


Figure 41. Te-kivi-a-te-kakai

Figure 42. Te-kivi-a-Yilewu



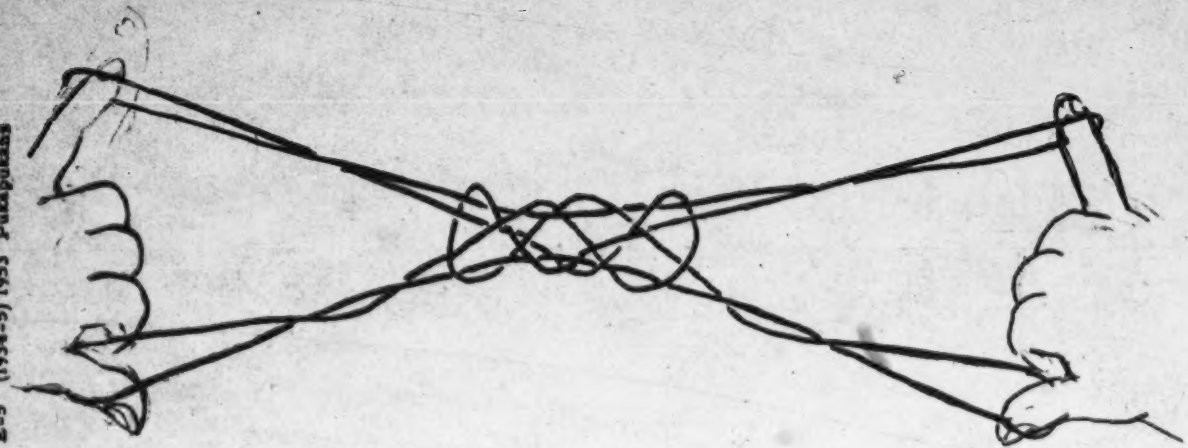


Figure 43. Te-imu-o-Te-Lautalo

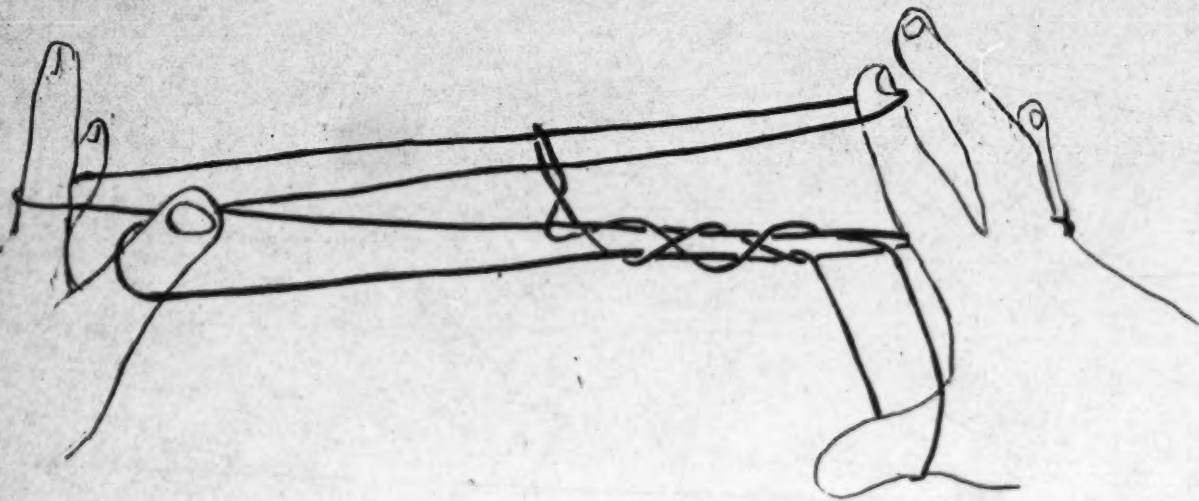


Figure 44. Te-tavatava-o-te-wui-kirole

Figure 45. Te-la-palepale

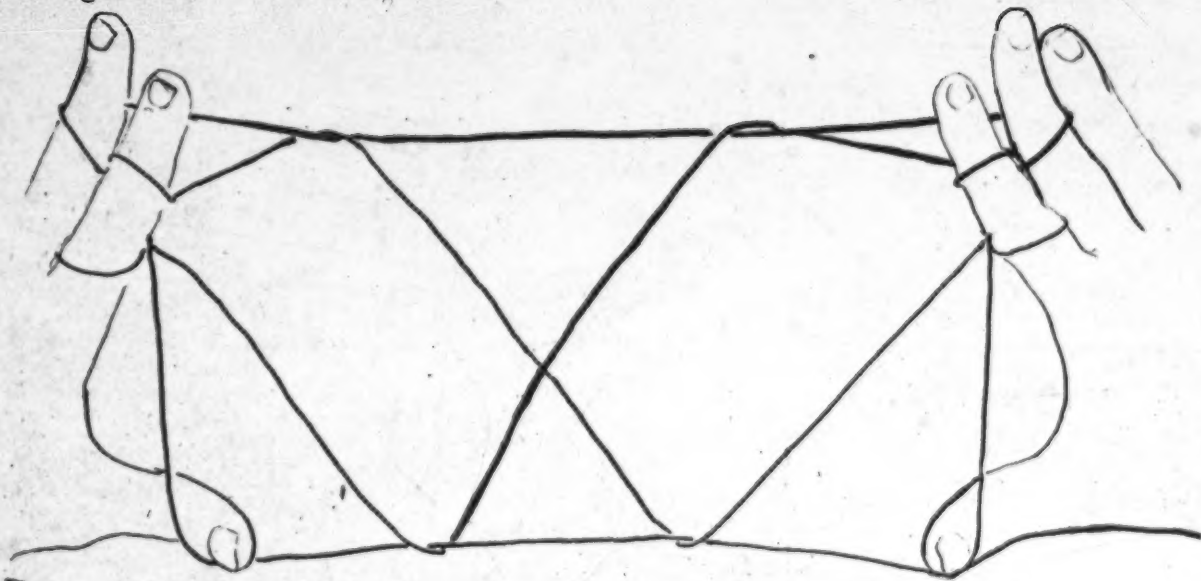
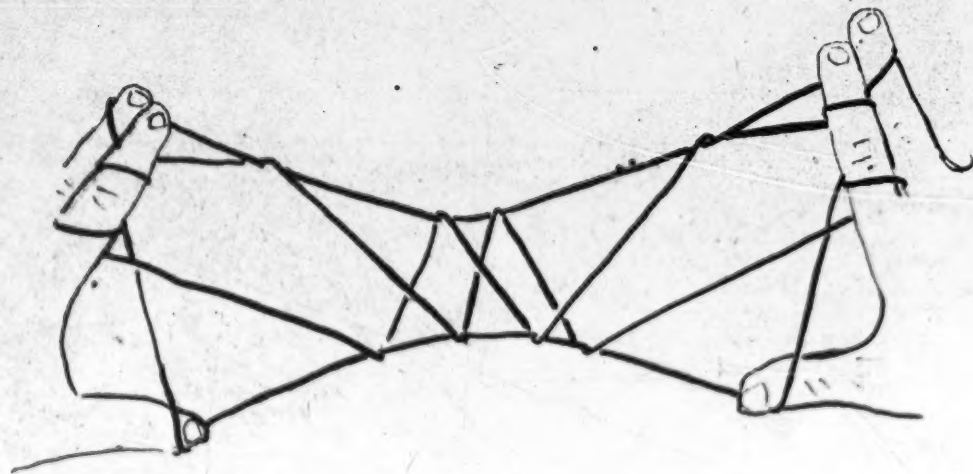


Figure 46. Moamoa



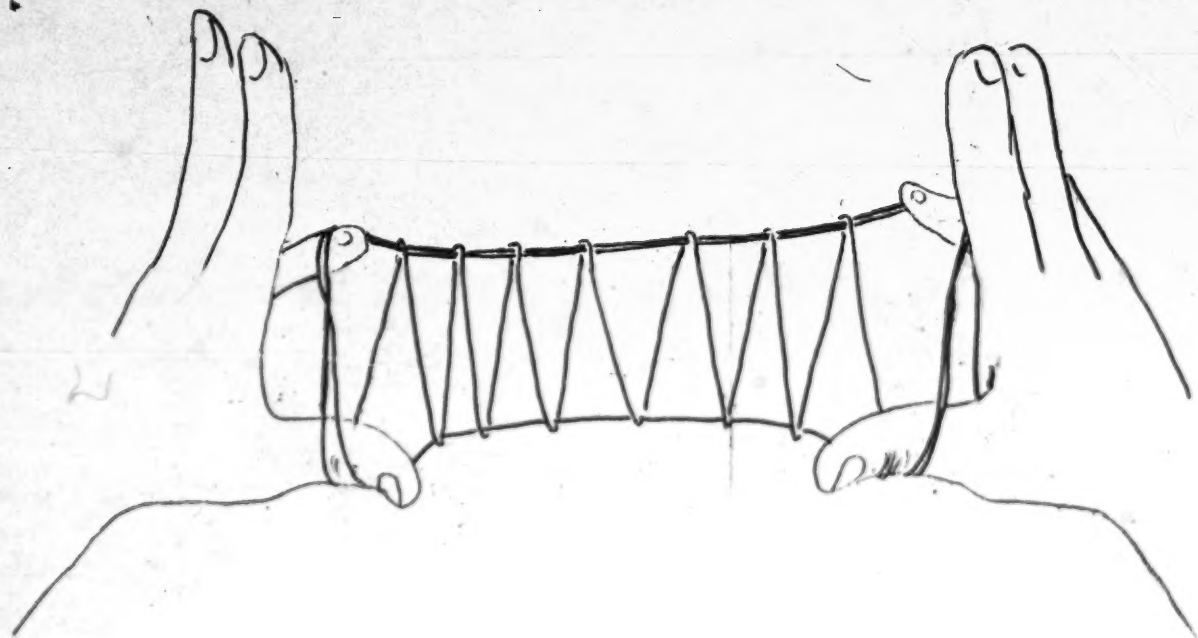


Figure 47. Te-wua-ya-valu

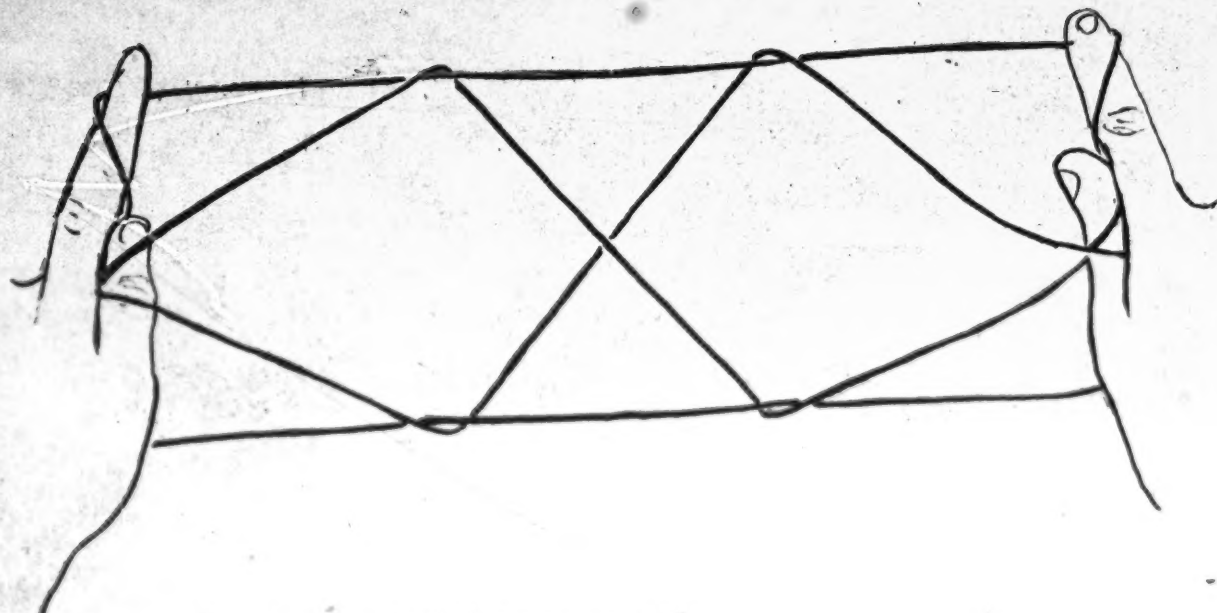
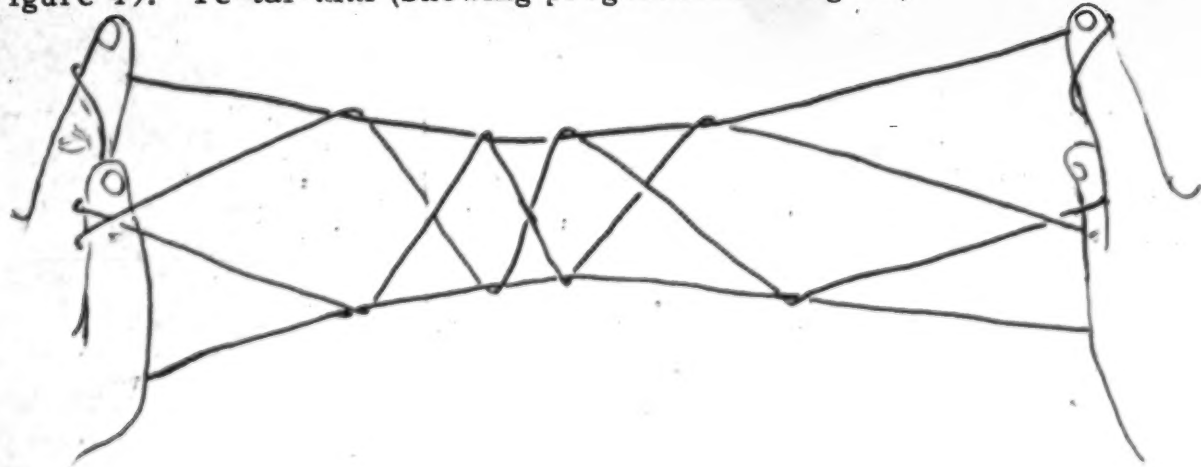


Figure 48. Te-tai-kiki (Movement 5)

Figure 49. Te-tai-kiki (Showing progression of figure)



4: Baigichole-40 E-S (1934-5) 1953 Pukapuka

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Figure 50. Te-tai-kiki (Showing the tide going farther out)

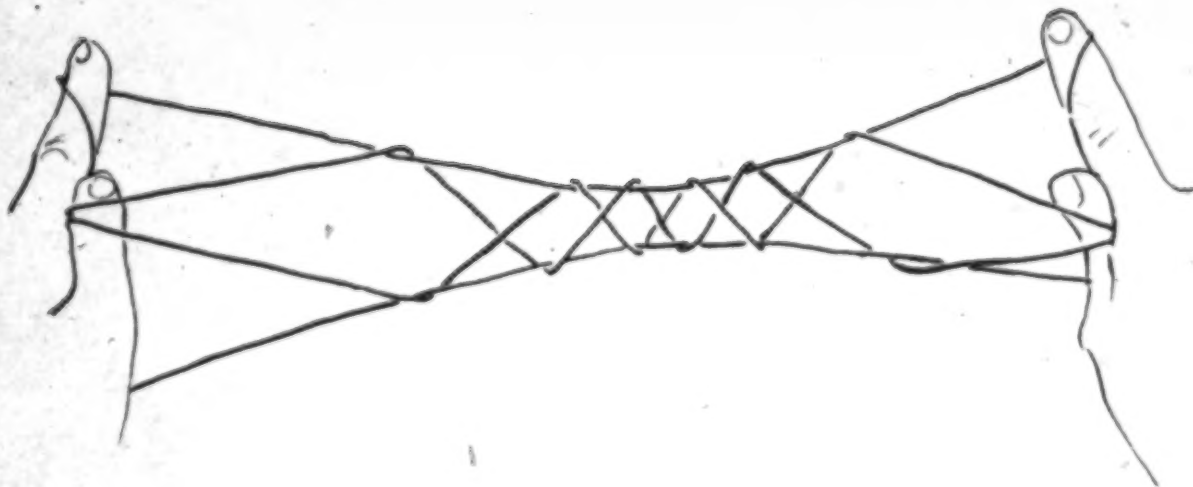


Figure 51. Matua kalou (Movement 3)

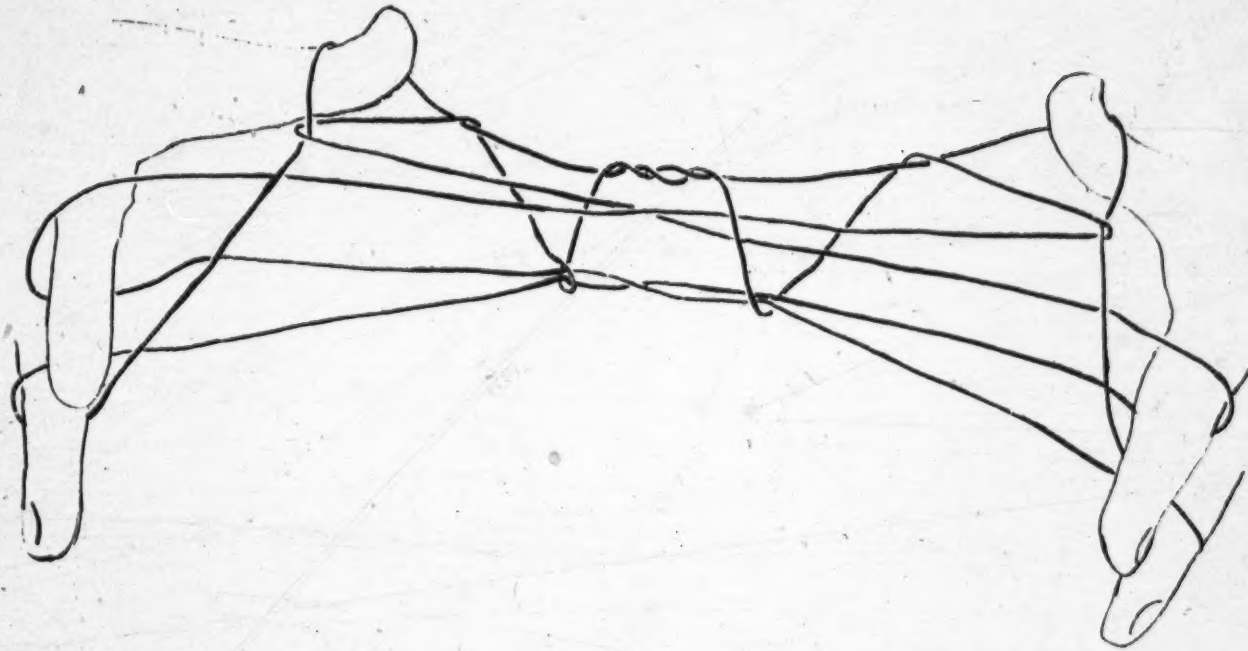
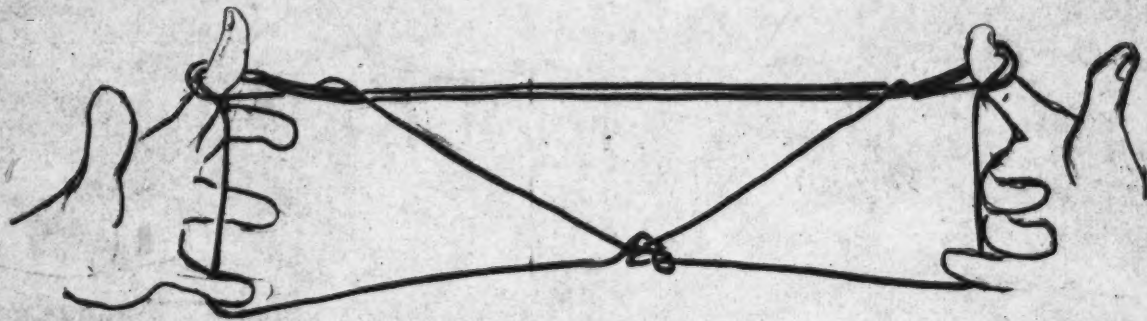


Figure 52. Matua kalou (Movement 5, ui kauana)



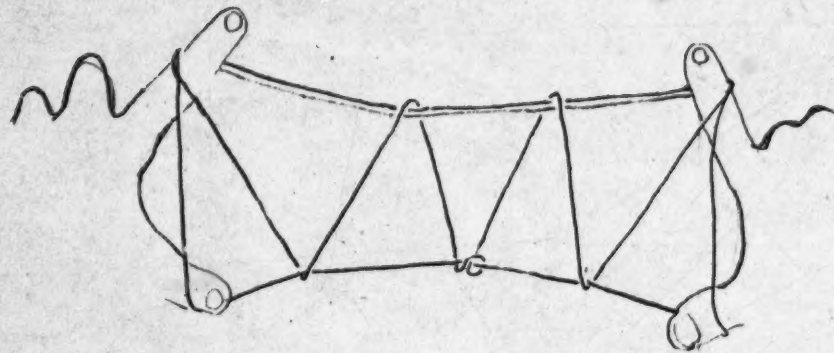
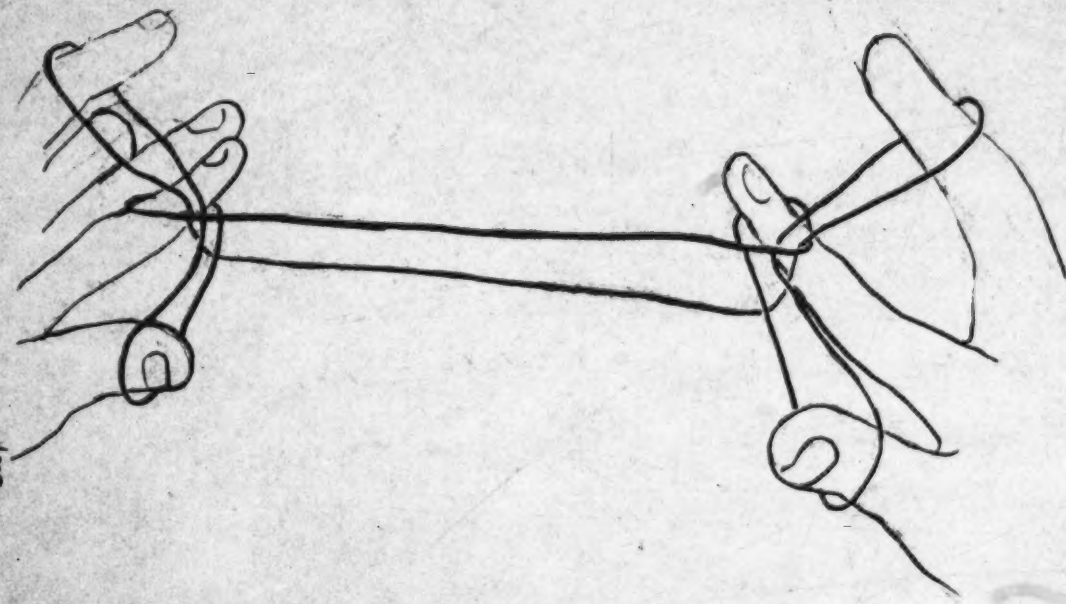


Figure 53. Matua kalou (Movement 7, ui lalapa)

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Figure 54. Te-kolemu-yengiyengi



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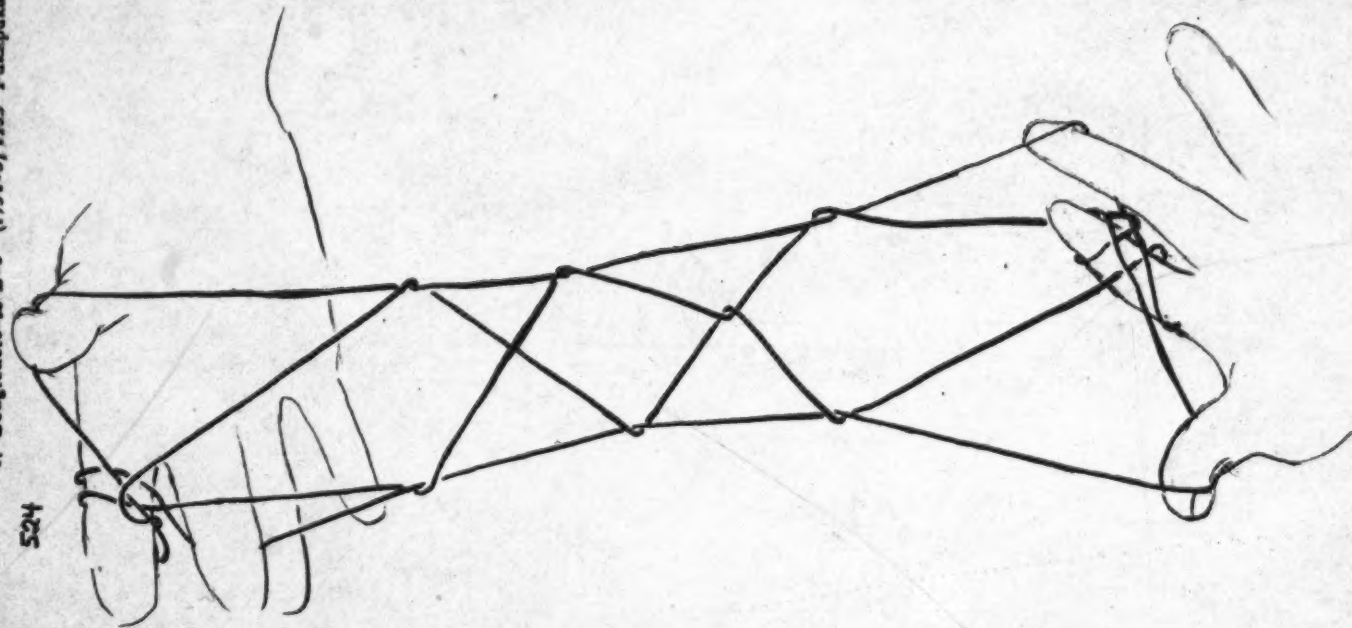


Figure 55. Tava (Movement 7)

4: Beaglehole-86 E-5 (1934-5) 1953 Pukapukans

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Figure 56. Tava (Completed figure worked by two players)

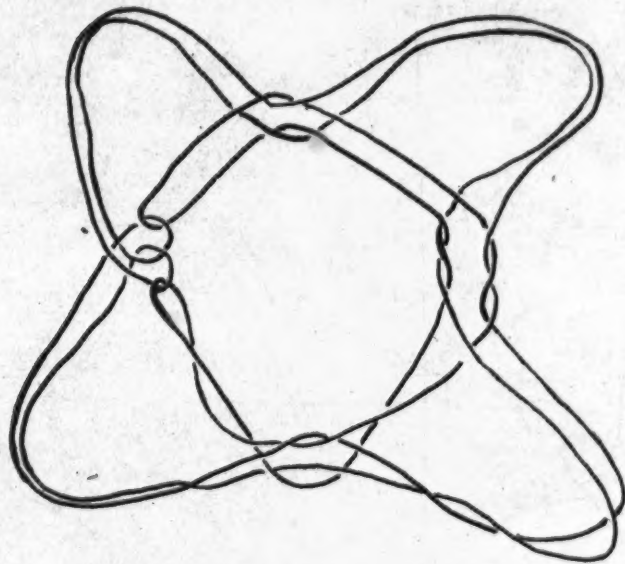


Figure 57. Tava (Showing hands of two players inserted for the "over and over")

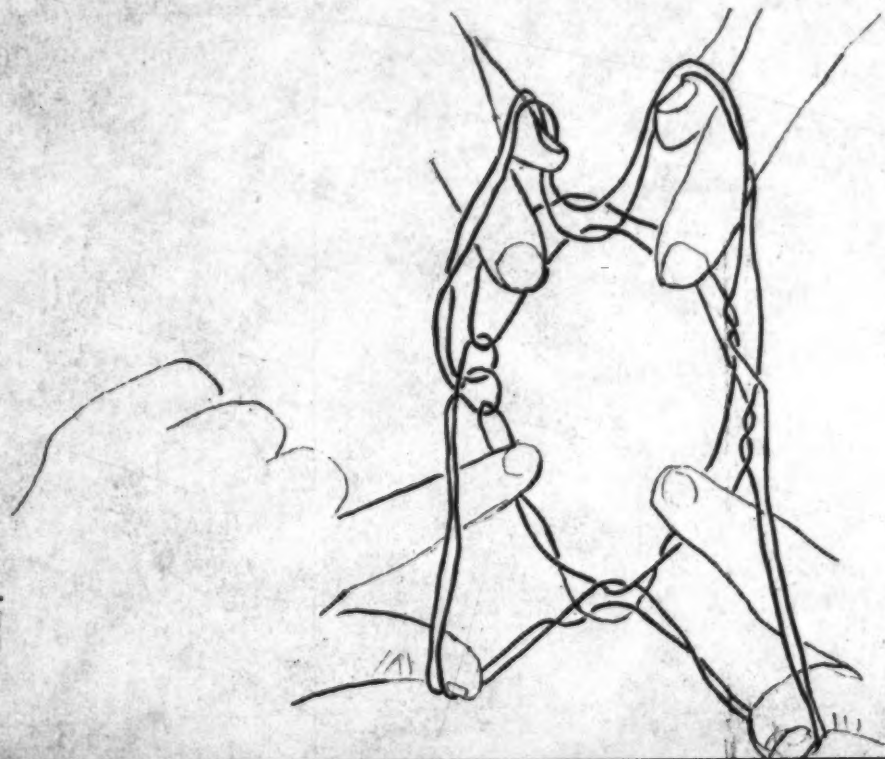


Figure 58. Taku-pu-lele-lua (Movement 14)

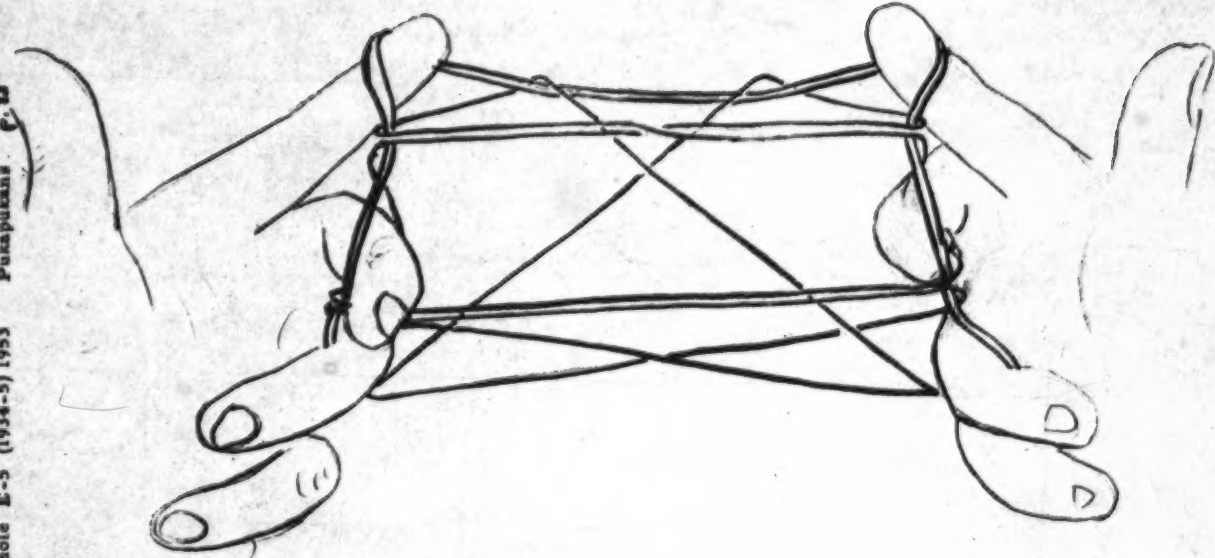


Figure 59. Taku-pu-tele-lua (Completed figure)

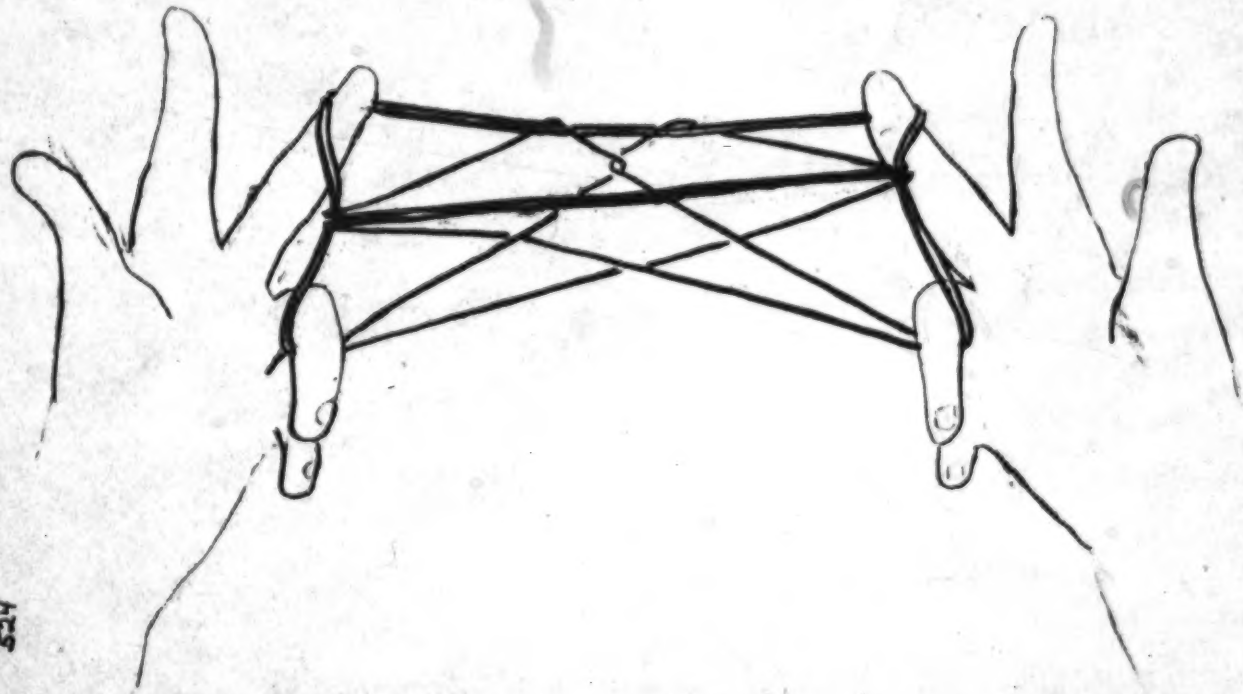
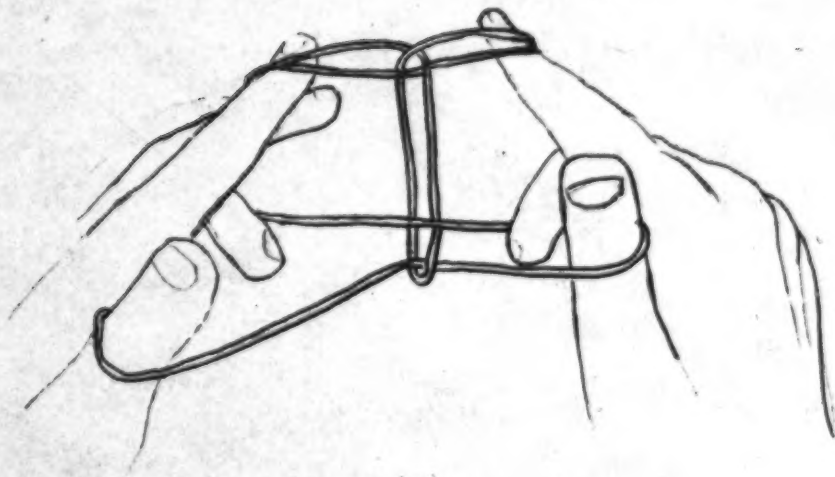
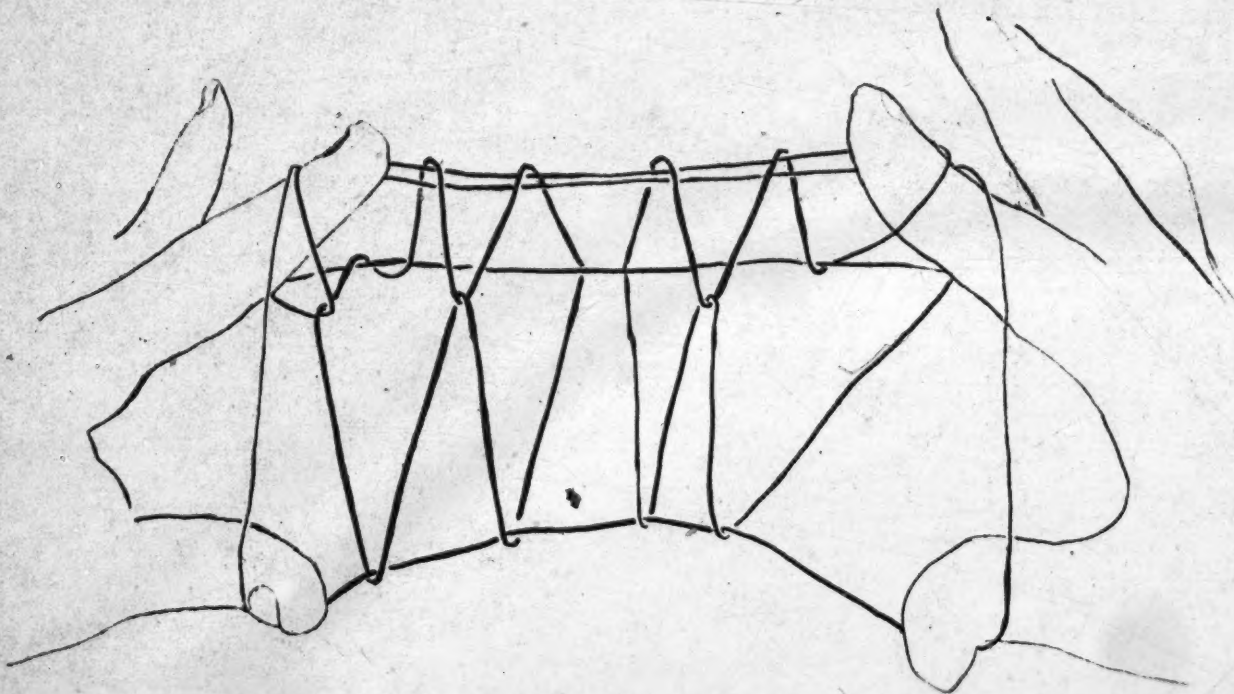


Figure 60. Te-Pu-a-Loto (a three-dimensional figure)





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Figure 62. Te-tala-o-te-yamayama (Movement 7, showing thumb pickup)

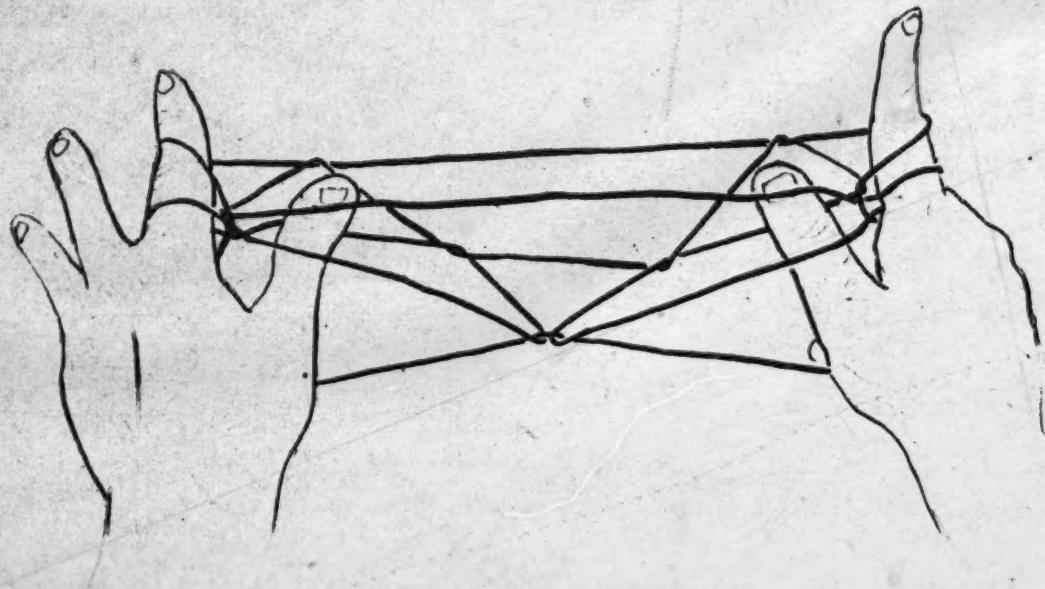
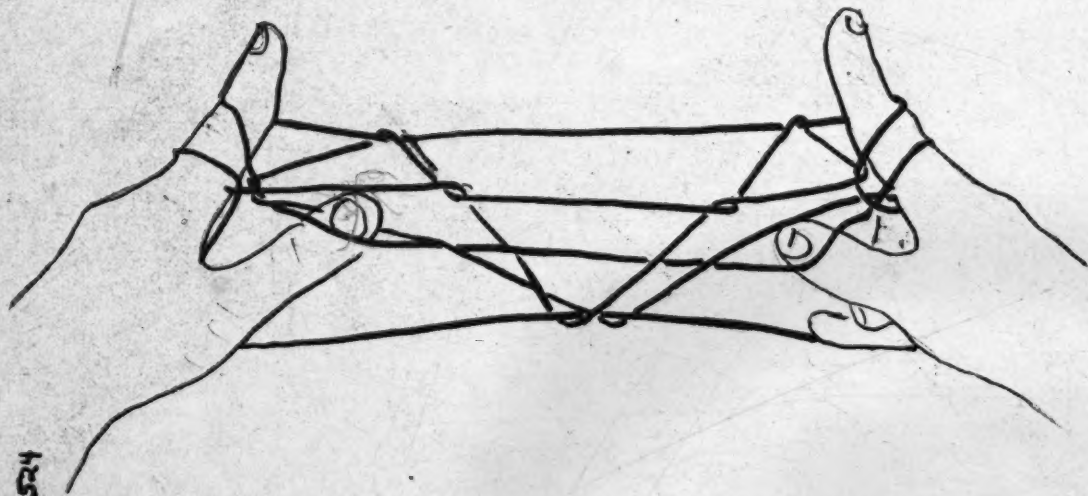


Figure 63. Te-tala-o-te-yamayama (the completed three-dimensional figure)



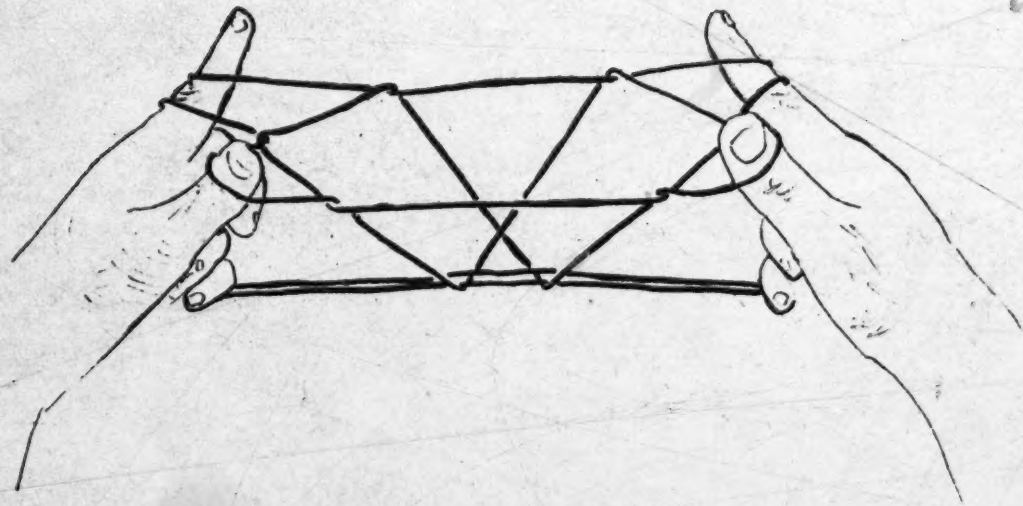


Figure 64. Kumete (a three-dimensional figure)

Figure 65. Kupenga
(Movement 9, showing the
looping of ulnar second-toe
string over little finger)

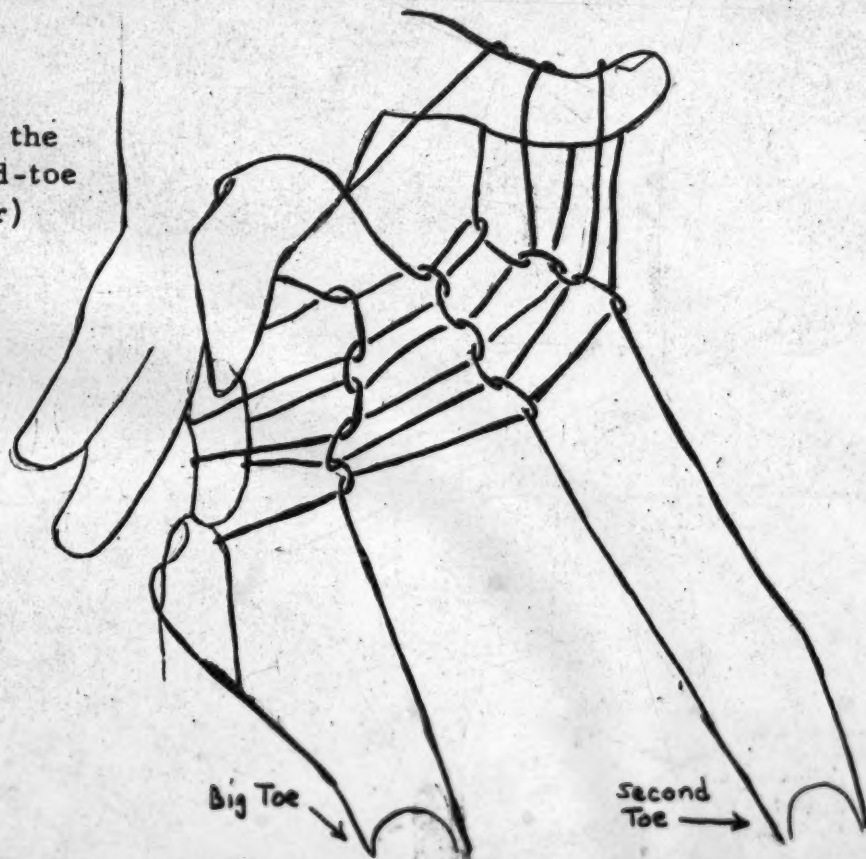


Figure 66. Kupenga (Completed figure)

